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AN EXPERIMENTAL INVESTIGATION OF HIGH-SPEED ROTORCRAFT DRAG

By

James C. Linville

February 1972

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U. S. ARMY AIR MOBILITY RESEARCH AND DEVELOPMENT LABORATORY
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An experimental investigation was carried out to determine the effect of Mach number on the drag characteristics of a high-speed wingless and winged helicopter when equipped with two different rotor head fairings. A simulated unfaired rotor head was provided as a basis for comparison. Tests were performed using a 1/9th scale model of a 60,000-pound class helicopter design. Data acquired included gross model force and rotor head force data, wing and pylon surface pressures, and tuft photos.

For the wingless helicopter configuration, the "floating" rotor head fairing operating in conjunction with a blowing boundary layer control (BLC) system provided a maximum equivalent drag saving of 5.5 square feet of parasite area at Mach numbers up to 0.4. The corresponding saving for the "rigid" fairing at a Mach number of 0.4 was 3.5 square feet. For the winged configuration, smaller savings were achieved, due primarily to interference drag resulting from an inadequate wing root-pylon junction for the high wing incidence investitgated.

Increasing Mach number increased the drag of all configurations tested. This drag rise was particularly severe at Mach numbers greater than 0.4 for all of the winged configurations tested with either faired or unfaired rotor heads and for the wingless configuration with the floating fairing.

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This report has been reviewed by the Eustis Directorate, U.S. Army Air Mobility Research and Development Laboratory and is considered to be technically sound.

The purpose of this effort was to determine, by an experimental investigation, the effects of Mach number on the drag characteristics of a high-speed helicopter. This investigation considered both conventional and winged helicopter configurations equipped with three different rotor heads (unfaired, rigid fairing, or floating fairing). The helicopter configuration with the floating rotor head fairing was also equipped with a boundary layer control device to reduce drag.

This program was conducted under the technical management of Mr. William T. Yeager, Jr., and Mr. Paul H. Mirick of the Aeromechanics Division of this Directorate.

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SUMMARY

An experimental investigation was carried out to determine the effect of Mach number on the drag characteristics of a high-speed wingless and winged helicopter when equipped with two different rotor head fairings. A simulated unfaired rotor head was provided as a basis for comparison. Tests were performed using a 1/9th scale model of a 60,000-pound class helicopter design. Data acquired included gross model force and rotor head force data, wing and pylon surface pressures, and tuft photos.

For the wingless helicopter configuration, the "floating" rotor head fairing operating in conjunction with a blowing boundary layer control (BLC) system provided a maximum equivalent drag saving of 5.5 square feet of parasite area at Mach numbers up to 0.4. The corresponding savings for the "rigid" fairing at a Mach number of 0.4 was 3.5 square feet. For the winged configuration, smaller savings were achieved, due primarily to interference drag resulting from an inadequate wing root-pylon junction for the high wing incidence investigated.

Increasing Mach number increased the drag of all configurations tested. This drag rise was particularly severe at Mach numbers greater than 0.4 for all of the winged configurations tested with either faired or unfaired rotor heads and for the wingless configuration with the floating fairing.

FOREWORD

This test program was sponsored by the Eustis Directorate, U. S. Army Air Mobility Research and Development Laboratory, and was monitored by Messrs. William Yeager and Paul Mirick. The program was authorized by DA Task 1F162203AA4102.

Mr. Evan Fradenburgh of Sikorsky Aircraft assisted in the design of the floating fairing system and in the analysis of the data obtained therefrom.

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LIST OF SYMBOLS

A_J	total boundary layer control nozzle exit area, ft^2
b	wing span, ft
C_f	aerodynamic cleanliness parameter, $f/(GW)^{2/3}$
C_P	pressure coefficient, measured pressure minus freestream static pressure/q, dimensionless
D_{bal}	measured balance drag, corrected for strut tare drag in the case of the tunnel balance, lb
Deq	total equivalent drag, $D_{ext} + D_{pump}$, lb
D_{ext}	effective external drag, $D_{bal} + D_{ram}$, lb
D_{pump}	drag equivalent of power required to drive boundary layer control system, HP_{pump} (550/V), lb
D_{ram}	ram drag, $\dot{m}V_o$, lb
f	parasite area, Drag/q, ft^2 (includes induced drag for test configurations with wing)
f_{RH}	rotor head parasite area, rotor head drag/q, ft^2
f_μ	boundary layer control net thrust parameter, T_{net}/q, ft^2
G_W	aircraft gross weight, lb
H_o	freestream total pressure, lb/ft^2
H_J	boundary layer control jet total pressure, lb/ft^2
HP_{pump}	power required to operate boundary layer control pump-duct system, horsepower
L	lift, lb
M	freestream Mach number, dimensionless
M_J	boundary layer control jet Mach number, dimensionless
$\dot{m}$	boundary layer control mass flow, slugs/sec
N	rotor RPM
PM	pitching moment, positive nose up, ft-lb
p_o	freestream static pressure, lb/ft^2

p_J	jet exit static pressure, lb/ft^2
q	freestream dynamic pressure, $\frac{1}{2}\rho_o V_o^2$, lb/ft^2
R	gas constant, 1715 $ft^2/sec^2\,{}^oR$
RN	Reynolds number, dimensionless
T_{gross}	boundary layer control gross jet thrust, lb
T_{net}	boundary layer control net thrust, lb
t_{s_o}	freestream stagnation temperature, ^oR
t_{s_J}	jet exit stagnation temperature, ^oR
V_o	freestream velocity, ft/sec
V_J	jet exit velocity, ft/sec
y	wing spanwise location, taken from the center of the wing, ft
α	fuselage angle of attack, deg
α_w	wing angle of attack, deg
β	Glauert similarity factor, $1/\sqrt{1-M^2}$, dimensionless
γ	ratio of specific heats, 1.40 for air, dimensionless
ρ_o	freestream stagnation density, $slugs/ft^3$

Note: Model configuration symbols listed in Table I.

INTRODUCTION

The feasibility of high-speed flight of conventional and compound helicopters has been demonstrated in numerous flight and wind tunnel tests. However, the efficiency of many of these aircraft could be significantly improved by minimizing rotor head and pylon drag. A number of rotor head fairing concepts have been proposed, and some of these have reached the wind tunnel or flight test stage. An accurate comparison of their effectiveness has not been made, however, because of differences in model scale and other test conditions. In addition, the effect of Mach number on the drag characteristics of helicopter designs with either faired or unfaired rotor heads has not been determined. Two promising rotor head fairing concepts are the "rigid" fairing, shown in Figure 1 on the Sikorsky S-67 Blackhawk™ helicopter, and the full-scale "floating" fairing with boundary layer control (BLC), shown in Figure 2.

The rigid fairing was designed to provide a minimum-size sealed cover for the rotor head. Blade flap and lag motions are accommodated by sealed ball joints which are attached to the blade cuffs just outboard of the coincident flap-lag hinge. The central portion of the fairing is attached directly to the rotor head. This fairing concept has previously been tested at small scale and low speeds in the wind tunnel, and in flight on the S-67 helicopter.

The ellipsoidal, floating rotor head fairing was developed to provide a streamlined, low-drag-coefficient enclosure for the rotor head, shaft and control rods. Previous investigations by Sikorsky Aircraft have shown that the theoretical reduction in drag provided by an ellipsoidal shell covering the rotor head may not be realized in practice because of the large adverse interference between the rotor head fairing and the pylon. This interference is manifested by flow separation over the aft portion of the pylon and fairing, and this separation may extend to the wing root area and aft fuselage. Attempts were made to alleviate the adverse pressure gradient over the aft fairing by cambering the ellipsoid to reduce the pressure gradient beneath it; however, this resulted in only minor reductions in drag.

In 1960, full-scale tests were carried out to investigate the reduction of interference between the rotor head fairing and the pylon by means of blowing boundary layer control (BLC). The rotor shaft and pushrods were enclosed in a circular cylinder with jet slots just aft of the maximum thickness point, blowing along a wedge-shaped afterbody as shown in Figure 2. The ellipsoidal rotor head fairing was attached to the rotor blades outboard of the flap-lag hinges, allowing it to "float" with the rotor tip path plane and thus minimizing the size of the cutout holes necessary to allow blade motions. The wedge-shaped afterbody was spring loaded and telescoping so that it followed the motions of the ellipsoidal shell. Sliding seals were provided between the afterbody and the ellipsoidal fairing and between the cylinder and the ellipsoidal fairing. This system, when used with the boundary layer control, was shown to reduce significantly the adverse interference between the fairing and the pylon so that the system provided a net saving in drag. These tests were reported in Reference 1.

The tests described in this report include a model buildup of 21 configurations including both fairing concepts on wingless and winged helicopters. Tests were conducted at various angles of attack for Mach numbers from 0.2 to 0.6. Rotor head RPM was also varied. Data acquired include gross model lift, drag, and pitching moment, rotor head drag (measured by a separate balance), and pylon and wing surface pressures.

DESCRIPTION OF MODEL AND TEST FACILITIES

MODEL

The test model was designed to represent the airframe of the Sikorsky S-65-200 compound helicopter, an aircraft design of approximately 62,000 pounds gross weight, with a 79-foot-diameter rotor and a 47.5-foot wing span. Although no rotor was tested under this contract, the model size was selected to be compatible with existing 9.0-foot-diameter model rotors. Thus, the scale factor (in length) is $9/79 = 0.114 \approx 1/9$. A drawing of the model is presented in Figure 3.

MODEL CONFIGURATIONS

The model fuselage could be equipped with either of two main rotor pylons, two rotor head fairings (each associated with a particular pylon), an unfaired rotor head, blade stubs, and a wing. Twenty-one combinations of these components were tested during this investigation. The model component designations are listed in Table I. Table II summarizes the test configurations and the type of data acquired for each. Photographs of each of the rotor head configurations are shown in Figure 4. The two complete configurations with fairings are shown in Figure 5.

Table III summarizes the frontal areas of the various model components.

FUSELAGE AND ROTOR DRIVE

The fuselage was constructed with an aluminum and fiberglass skin over a steel frame. The model was mounted on an existing single strut which was swept forward from the tunnel floor at 30° with the fuselage at zero angle of attack. All instrumentation and model support lines were internal to this strut. The fuselage was also equipped with a downward-angled V-tail in order to eliminate any yaw-sideslip instability of the model on the flexible support strut. The V-tail had an included angle of 45° to provide a large effective vertical area. A photograph of the V-tail is shown in Figure 6, and its characteristics are summarized in Figure 3.

A rotor drive system was provided to rotate the rotor heads through an RPM range simulating rotor tip speeds from zero to 670 ft/sec. The complete rotor and drive system assembly was mounted on an internal strain-gaged six-component balance. Care was exercised in routing the rotor drive system power, cooling, and lubrication lines to minimize the interference between the metric and nonmetric parts of the model.

WING

The wing was constructed of fiberglass over an aluminum spar. Figure 7 is a schematic of the wing, including pressure tap locations and dimensions. The wing was located in a high position in the aircraft design to avoid having the wing carry-through structure intrude into the useable cabin space. The wing was positioned longitudinally to place the wing aerodynamic center at the rotor centerline. The wing was set at an incidence of 8.5° with respect to the fuselage. This incidence was chosen so the wing and fuselage would carry two-thirds of the aircraft gross weight at a 230-knot cruise at 8000 feet with the fuselage level. Removable fillets were provided to fair the wing-fuselage-pylon junctions. The fillet for the rigid fairing pylon can be seen in Figure 4c. No provisions were made for wing flaps, ailerons, or propeller nacelles. Wing tips were formed by rotating the tip-section about the tip chord.

FLOATING FAIRING AND BOUNDARY LAYER CONTROL SYSTEM

The floating fairing system, incorporating a pylon, a boundary layer control system (BLC), and an ellipsoidal fairing, is shown with the wing in Figure 5a. This fairing system was previously tested at full scale but low speeds (Reference 1). The full-scale model is shown in Figure 2. In this design, the ellipsoidal fairing is mounted to the rotor blades outboard of the flapping hinge. This attachment method enables the fairing to move with the largest blade motions--steady-state lag, steady-state flap (coning), and first harmonic flap (tip-path-plane tilt)--thus reducing the size of the cutouts in the fairing necessary to accommodate blade motions. The 1/9th scale model fairing was equipped with blade stubs and the exposed tips of the blade retention cuffs to simulate the blade root-fairing junction, but actual blade cutouts and seals were not provided. Good sealing of the cutout holes is necessary for obtaining maximum drag reduction with any fairing. The model fairing was 16.9 inches in diameter and 4.5 inches high. The bottom of the fairing was located 1.75 inches above the top of pylon P_2.

The BLC cylinder was 6.0 inches in diameter and was fitted with a wedge-shaped afterbody which provided a sharp trailing edge. On operational fairings, this afterbody would be designed to follow the coning and tip path plane tilt motions of the rotating fairing; this was done in the full-scale test, Figure 2, but not in the 1/9 scale model tests. Felt seals were provided between the afterbody and the fairing and between the BLC cylinder and the fairing. Two jets, shown in Figure 8, exhaust air tangentially along the afterbody to prevent separation behind the BLC cylinder. Thus, attached flow is maintained on the fairing and rear pylon. The jet slots were vertical, and were located at an angle of 100° aft of the cylinder leading edge. The jets were each 2.66 inches high by 0.10 inch wide. Four vanes were mounted in each of the jet slots to produce an even, tangential flow pattern. These vanes were 0.040 inch thick; therefore, the total jet area was 0.50 square inch. Air was supplied at a controlled mass flow to the BLC cylinder through three 1-inch hoses from a 400-psi source. A plenum chamber was located inside the cylinder. The supply air was diffused through perforated pipes which were designed to provide low velocities and uniform pressure inside the plenum. Jet total pressure was determined by several total pressure tubes within the plenum chamber.

The BLC cylinder was bolted to the floating fairing pylon, P_2, which was made of mahogany. A drawing of the floating fairing pylon with the BLC cylinder and afterbody is shown in Figure 9. Pressure tap locations, shown in this figure, are specified by longitudinal station in inches from the rotor shaft centerline and section cut. Section cutting planes are taken parallel to the longitudinal axis of the fuselage and pass through the fuselage top center. The zero-degree section cutting plane is horizontal to the left side of the aircraft, the 90° section cutting plane is vertical, and the 180°-section cutting plane is horizontal to the right side of the aircraft.

RIGID FAIRING

The rigid fairing consists of a minimum-size, sealed cover for the rotor head. A photograph of a full-scale fairing of similar design installed on the S-67 Blackhawk is shown in Figure 1. The main shell of this fairing is attached rigidly to the rotor head, and a felt seal is provided between the shell and the pylon. Each inboard blade segment is covered by a spherical shell centered on the coincident flap and lag hinges. This component is attached to the blade outboard of the flap-lag hinge to allow blade motions. The sliding joint between the main fairing shell and the ball is equipped with a seal. The unfaired arms extending from the top of the S-67 fairing are bifilar vibration absorbers, and are not part of the fairing.

The model fairing, shown in Figure 4c, was equipped with a felt seal between the fairing and the pylon; however, no attempt was made to simulate working seals between the flapping and nonflapping portions of the fairing. Two-foot-diameter blade stubs were provided.

The pylon for the rigid fairing was made from mahogany and was equipped with adapters to allow testing with and without the wing and the rigid fairing. This pylon was pressure tapped as shown in Figure 10.

When the rigid fairing was tested without the pylon, an aluminum disc was provided to cover the bottom of the fairing.

ROTOR HEAD

In addition to the two rotor head fairings, a representative 4-bladed rotor head was provided as shown in Figure 4a. The rotor head was made of aluminum with a flap-lag hinge offset of 3.625 inches and could be equipped with 2-foot-diameter blade stubs of elliptical cross section. A simulated swashplate and pushrods were also included.

As a result of an oversight, the rotor head was tested with four spacers (shown in Figure 4a) during the early portion of the test. These spacers were used to mount the rigid fairing to the rotor head and were removed for the last three bare rotor head conditions tested. The three rotor head configurations are designated: H_1 - without blade stubs but with spacers; H_2 - including both stubs and spacers; and H_3 - including blade stubs and no spacers. The effects of the spacers were relatively small and can be determined directly by comparing data obtained with configurations FH_2 and FH_3.

WIND TUNNEL AND TEST CONDITIONS

The United Aircraft Research Laboratories (UARL) Main Wind Tunnel, shown in Figure 11, is a closed-circuit, single-return facility which can be equipped with either an 18-foot low subsonic or 8-foot high subsonic test section. This test was conducted in the 8-foot section, which has an octagonal cross section 7.75 feet across the flats. The tunnel fan is driven by a single 9000-horsepower electric motor producing high subsonic capability. Windows join the test section and the control room.

Air exchangers in a low-velocity portion of the tunnel stabilize the temperature of the airstream and cause the tunnel total head pressure to be atmospheric; density altitude therefore varies with test Mach number from about 1000 feet at M = 0.2 to about 7500 feet at M = 0.6. Figure 12 summarizes the variation in velocity and Reynolds number per foot with test Mach number. The large size of the model and the high test speeds make most of the model components supercritical throughout the test speed range; however, some of the rotor head components such as the blade cuffs are subcritical. Figure 13 presents the variation in critical length with test Mach number, assuming a critical Reynolds number of 3.5×10^5. The critical length was between 0.25 and 0.1 foot for all test conditions.

Some experimental results indicate that certain streamlined bodies of revolution display irregular drag characteristics in the transition range between Reynolds numbers of approximately 10^6 and 10^7 (Reference 2). It is possible that because certain components tested herein (notably the pylons) were operating in this Reynolds number regime, some of the effects noticed might be due in part to Reynolds number. It is believed, however, that the effects of Mach number on model drag discussed later are valid.

Unless otherwise specified, the rotor head rotational speed was 1422 rpm, corresponding to a tip speed of 670 ft/sec for a 9-foot diameter rotor. Tests were also conducted at zero and 711 rpm to determine the effect of rotor head rpm on drag.

DATA ACQUISITION EQUIPMENT

Two data acquisition systems were employed during testing. The primary system was the UARL Static Data Acquisition System, STADAS III, which automatically recorded on magnetic tape the wind tunnel operating conditions, tunnel balance data, and wing and pylon pressures. In addition, when the boundary layer control (BLC) system for the floating fairing configuration was operated, the BLC mass flow was recorded by STADAS III. Gross model forces were computed and transmitted to the control room on-line using a PDP-6 digital computer which was linked to a teletype.

Rotor balance data were displayed on and recorded from a Balance Axis Converter which can resolve six components of balance data into six forces and moments about an arbitrary reference axis system using analog circuitry.

In addition to the above, 70-millimeter photographs of tufts on the wing roots and pylons were taken at selected test conditions.

DATA REDUCTION AND ACCURACY

DATA REDUCTION

The data acquired by the STADAS III facilities and the Sikorsky Balance Axis Converter were processed off-line using . UNIVAC 1108 digital computer. All balance data have been corrected for gravity tares, and the tunnel balance data have been corrected for gross mounting strut tares. These tares are simply the measured drag of the mounting strut without the model attached. No corrections for the interference of the strut on the fuselage have been made. All force and moment data are in the wind axis system, have been scaled to full-scale values, and divided by freestream dynamic pressure for convenience in presentation. Model angle of attack has been corrected for wall effects, and the tunnel velocity has been corrected for solid and wake blockage (Reference 3). The following axis system origins were used: Rotor head forces were resolved about the center of the rotor head. Gross model forces were resolved about the intersection of the rotor shaft and fuselage centerline. Wing-alone forces were resolved about the quarter chord of the wing root section.

Force and pressure data obtained during testing are presented in tabular form in Appendixes I and II. Appendix I includes all of the model and tunnel operating conditions, tunnel balance data, and rotor head drag and RPM, where applicable. Appendix II includes the static pressure data on the two pylons and the wing.

DATA ACCURACY AND REPEATABILITY

The accuracies of the tunnel and rotor balance data in terms of full-scale forces and moments divided by dynamic pressure, and in terms of pounds and foot-pounds for the 1/9 scale model are as follows:

	Tunnel Balance Accuracy			Rotor Balance Accuracy
M	$f = D/q, ft^2$	$L/q, ft^2$	$PM/q, ft^3$	$D/q, ft^2$
0.2	0.4	4.8	5.8	0.7
0.3	0.2	2.3	2.8	0.4
0.4	0.1	1.3	1.6	0.2
0.5	0.07	0.9	1.1	0.15
0.6	.05	0.7	0.8	0.11
Pounds, foot-pounds:	± 0.3 lb	± 3.75 lb	± 4.5 ft-lb	± 0.6 lb

Figure 14 presents repeatability data for the tunnel balance drag measurements at a Mach number of 0.2. Figure 15 presents repeatability data for the rotor balance at Mach numbers of 0.2 and 0.4.

The static pressure data taken on the pylons and wing roots are accurate to 0.1 percent of the 10-psi full scale. Therefore, the accuracy of the pressure coefficients is as follows:

Mach Number	Accuracy in pressure coefficient, C_p
0.2	.025
0.3	.012
0.4	.007
0.5	.005
0.6	.003

Figure 16 presents repeatability data for the pylon pressures.

BOUNDARY LAYER CONTROL SYSTEM DATA

The ability of a boundary layer control system to energize the local boundary layer flow for prevention of separation is a function of the net thrust of the jet. If the jet exit pressure is equal to free stream static pressure, the net thrust is simply the product of the mass flow of the jet system and the excess of jet velocity over free stream velocity, or $T_{net} = \dot{m}\,(V_J - V_o)$. For the more general case, where jet exit pressure is not equal to free stream static pressure, the net thrust is the sum of momentum and pressure terms:

$$T_{net} = \dot{m}\,(V_J - V_o) + (p_J - p_o)\,A_J$$

This equation may be rearranged to represent gross thrust and ram drag terms:

$$T_{net} = \left[\dot{m}\,V_J + (p_J - p_o)\,A_J\right] - \left[\dot{m}\,V_o\right] = T_{gross} - D_{ram}$$

The gross thrust term may be derived in terms of jet Mach number, resulting in the following expression:

$$T_{net} = \left[\gamma\,p_J\,M_J^2\,A_J + (p_J - p_o)\,A_J\right] - D_{ram}$$

The gross jet thrust, as expressed by the bracketed term in the equation immediately above, was determined by measurement of pressures on the model in accordance with the following procedure. The total pressure in the jet, H_J, was assumed equal to the pressure measured within the plenum contained in the boundary layer control cylinder. This pressure was compared with the average surface static pressure measured on the two sides of the cylinder adjacent to the jet exits. If the ratio of surface static pressure to jet total pressure was greater than the critical pressure ratio of 0.528, then the jet was assumed to be subsonic, the jet exit pressure

p_J was assumed to be equal to the adjacent surface static pressure, and the jet Mach number was calculated from the ratio p_J/H_J in accordance with standard subsonic flow theory. If the ratio of adjacent surface static pressure to jet total pressure was equal to or less than 0.528, then the jet exit Mach number was assumed to be 1.0 and the jet exit pressure p_J was assumed to be 0.528 H_J. These assumptions are compatible with the fact that the nozzle was convergent only, not convergent-divergent. For either subsonic or sonic exit conditions the gross jet thrust was calculated in accordance with the bracketed term in the equation above. No nozzle coefficient was applied, i.e., the effective exit area was assumed equal to the geometric exit area.

The ram drag term, D_{ram}, did not exist on the wind tunnel model because of the manner in which the external supply of compressed air was introduced into the system. However, in an actual flight situation the boundary layer control air would be brought on board from the surrounding atmosphere and compressed by some means in the aircraft. In these circumstances there would be an additional ram drag force, equal to the product of the mass flow of the boundary layer control system and the free stream velocity, $\dot{m}\, V_o$. This ram drag was added to the experimental model drag measured by the wind tunnel balance to correct the drag to a flight situation. The mass flow used in determining ram drag was that mass flow of atmospheric air at an altitude corresponding to the tunnel operating condition, which, when pumped up in an isentropic manner from free stream total pressure to jet total pressure, would be compatible with the actual jet exit area. This mass flow generally was not identical to the actual wind tunnel model mass flow, because in the wind tunnel the jet temperature and therefore density for a given jet total pressure was not identical to conditions that would exist in flight. The mass flow used in the calculations was determined by the following equation, from Reference 4.

$$\dot{m} = \sqrt{\frac{\gamma}{R}}\ \frac{H_J}{\sqrt{t_{s_J}}}\ \frac{M_J A_J}{\left(1 + \frac{\gamma-1}{2} M_J^{\,2}\right)^{\frac{\gamma+1}{2(\gamma-1)}}}$$

where $$t_{s_J} = t_{s_o}\left(\frac{H_J}{H_o}\right)^{\frac{\gamma-1}{\gamma}}$$

To calculate the pumping power for the boundary layer control system the following procedure was followed. The horsepower was first calculated for the case of isentropic compression from the free stream total pressure H_o to the jet total pressure H_J:

$$HP_{pump\ ideal} = \frac{1}{550}\ \dot{m}\ \frac{\gamma}{\gamma-1}\ R\ t_{s_o}\left[\left(\frac{H_J}{H_o}\right)^{\frac{\gamma-1}{\gamma}} - 1\right]$$

An efficiency of 75 percent was assumed for the pump/duct system, so that the actual horsepower required is:

$$HP_{pump} = \frac{1}{.75} HP_{pump\ ideal}$$

The pumping power is converted to an equivalent drag by the equation

$$D_{pump} = \frac{550\ HP_{pump}}{V_o}$$

For convenience in the analysis, both thrust and drag terms are converted to equivalent parasite area terms by dividing by free stream dynamic pressure:

$$\text{BLC Net Thrust parameter} = f_{\mu} = \frac{T_{net}}{q}$$

$$\text{Equivalent Parasite Area for Pumping} = \frac{D_{pump}}{q}$$

DISCUSSION OF RESULTS

THE FLOATING ROTOR HEAD FAIRING

Because of large adverse aerodynamic interference which can exist between streamlined covers for rotor heads and the rotor pylon and fuselage, some rotor head fairings may increase rather than decrease overall drag. The floating rotor head fairing was operated in conjunction with a blowing boundary layer control system to attempt to overcome this problem by prevention of separation over the aft portion of the rotor head fairing and pylon. The boundary layer control air is ejected through slots on either side of a cylindrical cover (BLC cylinder) for the rotor shaft and control rods. Typical effects on drag of this fairing are summarized in Figure 17. The left-hand bar represents the drag of the configuration without interference between the rotor head fairing and the pylon. This is the sum of the measured drag of the floating fairing when tested on the fuselage without a pylon (and with the shaft drag subtracted), and the measured drag of the fuselage, pylon, and BLC cylinder and afterbody tested separately (configuration FP_2BLC). When tested this way, the floating fairing accounts for only 6.2 square feet of drag, and the fuselage, pylon and BLC cylinder account for 17.6 square feet. The assembled configuration FP_2BLCF_f without the boundary layer control in operation, shown by the middle bar of Figure 17, has significantly more drag on both the rotor head fairing and the fuselage-pylon assembly due to the large adverse interference between the pylon and the fairing. The total drag of this configuration is more than 50 percent higher than the drag of the isolated components, with the largest increase being due to the fairing drag, which more than doubles. With the boundary layer control turned on to the optimum operating point, shown by the right-hand bar, the measured drag of the configuration (including an added ram drag as discussed under DATA REDUCTION AND ACCURACY) drops to a value approximately equal to the sum of the component drags. This indicates that the interference drag has been substantially eliminated by use of the BLC.

In order to make a fair assessment of the performance of the floating fairing with boundary layer control, it is necessary to include an allowance for the power required to operate the BLC system. Assuming that a 75-percent-efficient pump and duct system is used, the drag equivalent of the power required is 3.1 square feet; the power required at sea level at $M = 0.2$ ($V = 132$ knots) is about 75 horsepower. Note that although the aircraft engines have to supply this power to the BLC system, the main propulsive device (the rotor in the case of a pure helicopter) does not have to overcome the equivalent drag of the BLC power. For the case shown, the propulsive requirement corresponds to a parasite area of 24.6 square feet, not the total equivalent area of 27.7 square feet.

The effect of varying boundary layer control on the drag characteristics of the floating rotor head fairing is presented in Figure 18, taken from tests of a full-scale S-61 floating rotor head configuration (Reference 1).

This figure is presented in terms of the variation of the effective external drag and the total equivalent drag versus net thrust parameter, f_μ, and is scaled to the 79-foot-diameter rotor case by the ratio of fairing frontal areas. The BLC net thrust parameter, f_μ, is the calculated net thrust of the boundary layer control jets divided by the dynamic pressure. As discussed under DATA REDUCTION AND ACCURACY, the effective external drag is the drag measured by the tunnel balance plus the ram drag which was not measured by the balance but which would exist on an aircraft in flight. The effective external drag is the drag which must be overcome by the aircraft thrust system. As the net thrust parameter is increased from zero, the effective external drag decreases very rapidly up to an f_μ of approximately two square feet and then drops off more slowly at higher f_μ.

The total equivalent drag, the upper curve of Figure 18, is a measure of the overall effectiveness of the system because it includes the drag equivalent of the power required to drive the BLC system, assuming a 75 percent efficient pump and duct system. Most efficient operation of the fairing system is at the minimum total equivalent drag, which occurs at an f_μ of about 1.5 square feet.

The results of the model tests of the floating fairing with BLC are qualitatively very similar to the full scale results. Figure 19 presents external drag data for both wingless and winged configurations for the range of test Mach numbers. As in the full scale case, the effective external drag typically drops rapidly between a BLC net thrust parameter of zero and two square feet, and then continues to decrease more slowly at higher f_μ. Because of the large, high pressure air supply system used to supply the BLC jets, it was not possible to vary the BLC airflow during the test in small enough increments to pinpoint the knee of the curve accurately in all cases, but the family of curves is well defined. The characteristics of these curves are what would be expected from a theoretical standpoint. The application of boundary layer control reduces interference drag by reducing the extent of separated flow in the area downstream of the BLC jets. Once the flow is attached in the region influenced by the jets, no further reduction of model drag can be expected at higher f_μ, except for the apparent reduction of drag caused by the thrust of the jet itself. If the actual external drag of the model were constant, the slope of the effective external drag curve would be exactly minus one, i.e., one square foot of BLC net thrust parameter would reduce the effective external parasite area by exactly one square foot. As can be seen, the actual experimental slope of the curves at high f_μ values has an average value of approximately -0.66. This result indicates that approximately one-third of the BLC net thrust is lost, because of an increase in actual model external drag beyond the knee of the curve. This effect is to be expected because the BLC air flows at high speed in a thin layer adjacent to the model surface downstream of the jet nozzles, increasing skin friction drag.

The general characteristics of the experimental effective external drag curves in Figure 19 were used in establishing the total equivalent drag curves, presented in Figures 20 and 21 for the wingless and winged configurations respectively. For each case where the experimental data points are insufficient to define the knee of the curve, the effective external drag curve (lower line) is drawn through the available points with a slope of -0.66 for f_μ greater than 2.0, and then faired to the experimental drag value at $f_\mu = 0$. These curves are the same as those presented in Figure 19. The upper curve for total equivalent drag is then constructed from the lower curve in accordance with the analysis discussed under DATA REDUCTION AND ACCURACY. Thus the fairing of the upper curve is not arbitrary, and in fact the minimum equivalent drag is quite accurately determined. In most cases the minimum point occurs at an f_μ of approximately 1.5 square feet.

The boundary layer control provided reductions in the total equivalent drag of the floating fairing configurations at all test Mach numbers, with the exception of the winged configuration at M = 0.6, Figure 21d. It should also be noted that for the wingless configuration at M = 0.6, Figure 20c, only small reductions in drag were realized, and in fact the minimum drag value was greater than for the unfaired rotor head configuration. This result is believed to be due to the low critical Mach number of the thick shapes which comprise the fairing systems tested and the relatively large frontal area of the floating fairing, which was designed to cover a "current practice" rotor head system. Careful design of rotor heads with a view toward providing a low-frontal-area package would alleviate this problem and will undoubtedly prove to be necessary if efficient flight at Mach numbers greater than 0.5 is envisioned.

Under some test conditions a model shake phenomenon, associated with operation of the BLC jets, was encountered. At a test Mach number of 0.4 this shake occurred between f_μ values of approximately 1.0 square foot and 6.0 square feet. At a test Mach number of 0.5 the shake occurred for all non-zero f_μ. Although detailed investigation of the phenomenon was not possible, observations of tufts on the pylon during this shake showed a slow (2-3 hz) oscillation of the flow over the aft portion of the pylon. No particular cause could be determined. Operation of the model at the other test Mach numbers was smooth for all angle-of-attack and f_μ conditions.

Figure 22 presents a chart of horsepower required to drive the BLC blower (pump) and duct system for the full scale aircraft as a function of flight Mach number and altitude, for a BLC net thrust parameter f_μ of 1.5 square feet, the approximate optimum operating point. Efficiency of the pump-duct system is assumed to be 75 percent. Power levels at high flight Mach numbers are substantial, but may be reduced considerably by flying at altitude.

Further reductions in power might be obtained by using a larger BLC jet area, which would reduce the jet velocity ratio required to achieve a given jet momentum. Other geometric variables, such as location of the BLC jets in another position or a different distribution of the jet exit area, might also reduce power required. These possibilities were not explored in this test program.

Observation of tufts on the model clearly shows the reduction in separation with the application of BLC. Figure 23 shows the wingless model with the floating fairing (configuration FP_2BLCF_f) with the BLC off and on at M = 0.2. With BLC inoperative, the entire after portion of the pylon is separated, and the flow over the aft fuselage is turbulent. With the BLC system operating at an f_μ of 5.6 ft^2, the flow over the aft pylon has attached and the flow over the aft fuselage is no longer turbulent. (One damaged tuft on the aft pylon is not aligned with the flow.) A similar pattern can be seen for the model with the floating fairing and the wing in Figure 24 at M = 0.2. For $f_\mu = 0$, separated flow exists over the entire aft pylon, fuselage, and wing roots. Operation of the BLC system at $f_\mu = 5.1$ ft^2 results in attached flow, although there is some turbulence over the aft pylon. (Note again that one tuft is damaged on the aft pylon.)

An important advantage of the floating fairing may be in the significant reduction in turbulence aft of the rotor head. Most rotor head fairings, including the rigid fairing tested in this investigation, reduce drag by covering the rotor head with a shell which has less drag than an unfaired rotor head, but which still has significant separation. This separated flow tends to follow the aft pylon and fuselage, causing severe turbulence, reduced tail effectiveness, and possible "tail shake".

The pressure distribution over the pylon for the wingless floating fairing configuration (FP_2BLCF_f) at a Mach number of 0.4 is shown in Figure 25 for $f_\mu = 0$ and 8.8 square feet. Figure 26 presents the pressure over the BLC cylinder for the same conditions. Operation of the BLC system increases the pressure peak over the middle portion of the pylon and BLC cylinder, and causes a greater pressure recovery on the after pylon and afterbody. The pylon pressure distribution for the compound configuration (FWP_2BLCF_f) shown in Figure 27 is affected similarly. A reduced pressure drag on the pylon is clearly indicated. Note, however, that the large negative pressure peaks associated with attached flow over the pylon will reduce the critical Mach number.

Trim and performance changes associated with possible loss of the BLC system during high-speed flight are small, except for a possible change in tail effectiveness due to the increased rotor head - pylon wake. The variation in model lift, drag, and pitching moment with angle of attack for the BLC off and on is shown in Figures 28 and 29 for the pure and compound helicopters at M = 0.4, corresponding to a cruise speed of 265 knots at 4000 feet. The drag shown in these figures is the external drag, which includes ram drag, but not the drag equivalent of pumping power, since only the change in effective external drag affects the deceleration of the aircraft. The trim and performance changes for the wingless helicopter, shown in Figure 28, should not be difficult to manage; the increase in drag causes a deceleration of less than 0.1g, the increase in lift would cause an upward acceleration of approximately 0.15g, and the decrease in pitching moment could be trimmed by less than two degrees of elevator, assuming the elevator control power derivative measured in 1/20th scale tests of a similar configuration. For the compound configuration, Figure 29, the changes in lift and pitching moment are much less than for the pure helicopter, and the change in drag is approximately the same as for the pure helicopter.

THE RIGID ROTOR HEAD FAIRING

The rigid rotor head fairing was designed as a smooth, minimum-area sealed cover which would have a significantly lower drag coefficient than the exposed rotor head. The performance of this fairing is summarized in Figure 30 for the wingless helicopter configurations. Experimental drag values for the fuselage alone (F); the fuselage and pylon (FP_1); the fuselage, pylon, and unfaired rotor head (FP_1H_2); and the fuselage, pylon, and rigid rotor head fairing (FP_1F_R); are shown. The two dotted lines labeled FP_1+H_2 and FP_1+F_R represent the sum of the drag of the fuselage-pylon configuration (FP_1) and the bare rotor head (H_2) and the rigid rotor head fairing, (F_R) respectively. Since the drag of the rotor head was measured on the complete configuration (FP_1H_2 or FP_1F_R), the dotted lines include the interference of the pylon on the rotor head. Therefore, the difference in FP_1+H_2 and FP_1H_2 is the interference of the rotor head on the pylon and fuselage, and the difference in FP_1+F_R and FP_1F_R is the interference of the rigid fairing on the pylon and fuselage. It can be seen that the interference drag due to the rigid fairing is greater than that due to the rotor head (except at $M = 0.2$), but since the drag of the rigid fairing is significantly less than the drag of the rotor head (about 5 square feet less at $M = 0.4$), a net reduction in drag of about 3.5 square feet is obtained at $M = 0.4$.

Figure 31 summarizes the drag characteristics of the rigid fairing on the configuration with wing at a constant angle of attack of -1.4 degrees, corresponding approximately to the airframe design lift coefficient at $M = 0.4$. In this plot, the dotted lines represent the sum of the drag of the fuselage-wing-pylon configuration (FWP_1) and the drag of the rotor head (H_3) and the rigid fairing, (F_R) respectively. As was the case for the wingless configurations, the interference drag of the exposed rotor head on the pylon and fuselage is less than that of the rigid fairing. At Mach numbers up to 0.4, the rigid fairing provides a net saving in drag. However, at a Mach number between $M = 0.4$ and $M = 0.5$, the drag saving disappears and a drag penalty results at $M = 0.5$ and 0.6. This effect is associated with the larger frontal area of the fairing and the negative pressure peaks caused by the shape of the rigid fairing configuration. Figure 32 presents the pressure distribution for $M = 0.4$ along the 60° section cut on the rigid fairing pylon (P_1) with no rotor head, with the bare rotor head (H_3), and with the rigid fairing (F_R). The largest negative pressure coefficient, $C_p = -1.28$, occurs on the configuration with fairing, FWP_1F_R.

Figure 33 presents the variation of the pressure distribution along the 60° section cut for the faired and unfaired configurations with wing, FWP_1F_R and FWP_1H_3. The pressure recovery over the aft pylon for both configurations decreases with increasing Mach number, although there is no evidence of severe shock separation.

The variation in lift and drag with angle of attack of the wingless helicopter with rigid rotor head fairing, configuration FP_1F_R, is presented in Figure 34. Figure 35 summarizes the variation in lift and drag of the winged helicopter with rigid rotor head fairing, configuration FWP_1F_R.

WING

Figure 36 presents the variation in lift and drag for the isolated wing at M = 0.2, 0.4, and 0.6.

The variation in spanwise wing loading for the compound configuration tested is presented in Figure 37 for a constant angle of attack of approximately 0.9 degree. Included in the figure is the calculated spanwise lift distribution for a similar wing, Reference 5. The significant difference in wing loading for the different pylon-rotor head configurations indicates that the accurate determination of wing loading and wing-fuselage lift sharing must be based on some more refined analytical technique which would include the effect of a particular pylon and rotor head. It is interesting to note that the increased wing loading for the floating fairing configuration with BLC does not result in an overall increase in lift. This is shown in Figure 29b. This is caused by an offsetting decrease in the lift of the floating fairing due to the lower pressures which exist over the bottom of this fairing with the application of BLC. The decrease in lift for the wingless floating fairing configuration (FP_2BLCF_f) with the application of BLC is shown in Figure 28b.

The wing installation used on this model, with a wing incidence of +8.5 degrees, was unsatisfactory due to premature flow separation which occurred in the wing root area. Figure 38 shows separation of the tufts on the wing root at α = 0.9 degree for the unfaired rotor head configuration with wing, FWP_1H_3, at M = 0.2; note that the five rearmost wing root tufts are not flowing along the wing surface.

The extreme pressure gradients in the wing root area make wing root fillet and rear pylon design extremely critical if separation is to be avoided. Figure 39 shows the chordwise pressure gradients on the wing for six of the configurations tested with the wing. Generally, pylons and fairings increase the maximum negative pressure in the wing root - pylon area. Figure 32 illustrates the effect of various rotor head configurations on the rigid pylon pressures. The increase in negative pressure and in adverse pressure gradients with application of BLC can be seen for the floating fairing configuration with wing in Figure 27.

The interference effects on wing characteristics noted in these tests suggest that the selection of wing location and incidence angle for a compound helicopter should be made preferably on the basis of systematic experimental studies. Tests should include variations of wing root fillets and pylon afterbody shapes, and model rotor heads should be as realistic as possible, including joints and seals, in order to obtain flow conditions representative of full scale operation.

MACH NUMBER EFFECTS

The effect of Mach number on the drag characteristics of the model configurations tested is summarized in Figures 40, 41, and 42. Figure 40 presents the variation in drag at zero angle of attack for the configuration buildup of the wingless helicopter with the rigid rotor head fairing.

Figure 41 presents the same information for the wingless helicopter with the floating rotor head fairing, and Figure 42 presents the effect of Mach number on the winged helicopter configurations at an L/q of 292 ft^2. This is the nominal design cruise lift condition of the aircraft (67 per- * of the lift supplied by the wing and fuselage at a cruise speed of knots and 8000 feet altitude).

The increase in drag with increasing Mach number is summarized in Table IV, which presents the drag of each configuration at the five test Mach numbers in terms of a percentage of the drag at M = 0.2. The slight decrease in drag of several configurations at M = 0.3 is presumed to be a Reynolds number effect. Included in this table is the variation of the Glauert similarity parameter referred to M = 0.2 ($\beta_{.2} = \sqrt{(1 - .2^2)/(1 - M^2)}$) which approximates the drag rise with Mach number of several configurations. A rough estimate of the Mach number effect on drag between M = 0.2 and M = 0.6 can be obtained by multiplying the incompressible drag by $\beta = 1/\sqrt{1 - M^2}$.

The relatively large increase in drag of the compound configurations at Mach numbers of 0.5 and 0.6 is due in part to shock stall on the wing complicated by the presence of the pylons and rotor head fairings. Figure 43 presents the chordwise variation of pressure coefficient on the wing at these Mach numbers showing the abrupt drop in pressure coefficient associated with shock stall on the upper wing surface at M = 0.6. It should be noted that comparison of the drag of compound configurations at constant L/q is not necessarily realistic, since the high-incidence wing is developing too much lift for Mach numbers beyond the design cruise point (M = 0.35).

The effect of Mach number on the pylon pressures of a typical configuration (FWP_1) is shown in Figure 44. This shows the decreasing minimum pressure coefficient with increasing Mach number, which was typical of the results obtained.

EFFECT OF ROTOR HEAD RPM

During the tests reported elsewhere in this report, the rotor heads and fairings were rotated at 1422 (100 percent) RPM, corresponding to a rotor tip speed of 670 ft/sec. Rotor head and gross model drag were also measured over a range of rotor head RPM from zero to 100 percent. These data are shown for various configurations with the unfaired rotor head in Figure 45, the floating fairing in Figure 46, and the rigid fairing in Figure 47. Data are shown for zero angle of attack for the wingless configurations and 0.9 degree for the winged configurations.

Gross model drag for some configurations decreased slightly as RPM increased from zero to 100 percent, possibly due to improved flow conditions behind the hub as a result of the "Magnus Effect". However, in general, the data do not reveal any consistent significant effect of rotor head RPM on either the model or the rotor head drag.

COMPARISON OF FAIRING TECHNIQUES AND CORRELATION WITH FULL SCALE

A direct comparison between the floating and rigid rotor head fairings is presented in Figure 48 for the configuration with and without the wing. In both cases, the drag saving is referred to the unfaired rotor head case - FP_1H_2 for the wingless helicopter and FWP_1H_3 for the helicopter with a wing. For the wingless helicopter, Figure 48a, the floating fairing gives a maximum equivalent drag savings of about 5.5 square feet at a Mach number of 0.4. At the same speed the rigid fairing provides a drag reduction of about 3.5 square feet. Note that while the floating fairing gives the largest drag saving at low speeds, it is more sensitive to Mach number and causes an increase in drag relative to the unfaired head at a Mach number of 0.6.

For the configurations with the wing, Figure 48b, the floating fairing and the rigid fairing are about equal at M = 0.2, with drag savings of about 3.0 square feet. At M = 0.3, the drag saving for the floating fairing appears to drop, possibly due to insufficient data. However, the measured drag saving at M = 0.4 for the floating fairing increases to about 2.5 square feet, which is equal to the saving for the rigid fairing at this Mach number. At the test Mach numbers greater than 0.4, both fairings provided no drag saving, due to the poor wing root junction and to the low critical Mach number associated with high wing incidence installation. As discussed previously, these results at Mach numbers of 0.5 and 0.6 are not considered to be indicative of the drag savings possible with a wing installation properly designed for these higher speeds.

A comparison of the results of this test for the wingless helicopter configurations at M = 0.2 with typical parasite drag data for operational helicopters is presented in Figure 49. It should be borne in mind that the test configurations did not have properly simulated full scale protrusions, antennae, control surfaces, etc. Most current operational transport and utility helicopters have a drag coefficient factor C_f of approximately 0.045, with more recently developed helicopters such as the AH-1 and the S-67 approaching a C_f of 0.02, which has been considered a goal for modern, low-drag helicopters. The results of this test indicate that this goal is realistic, and in fact it is quite possible that it can be bettered significantly if care is exercised in the design of the rotor head so that low-volume, low-frontal-area rotor head fairings can be used. Improvement in rotor head design would also lessen the detrimental effect of Mach number on drag.

CONCLUSIONS

As a result of the tests described in this report, the following conclusions have been drawn:

1. The floating rotor head fairing with boundary layer control (BLC) provided a drag reduction of up to 5.5 square feet (approximately 16 percent) for the wingless helicopter configuration, relative to an unfaired rotor head, for test Mach numbers up to 0.4. These drag savings include a penalty for the pumping power required for the BLC air; the actual effective external drag savings are greater. (9 square feet or 26 percent at a Mach number of 0.4). Because of relatively large frontal area, the floating fairing was not effective in reducing drag at the maximum test Mach number of 0.6.

2. The rigid rotor head fairing on the wingless configuration provided a drag reduction of up to 4 square feet relative to the unfaired case at low Mach numbers, decreasing to about 2 square feet at a Mach number of 0.6.

3. With the wing installation investigated, in a high location and at a high incidence angle, the drag savings afforded by either the floating fairing with BLC or the rigid fairing were reduced relative to the wingless configurations because of adverse interference effects. At a Mach number of 0.6, both types of fairing increased the drag relative to the unfaired head.

4. Increasing Mach number caused the drag of all configurations tested to increase. This increase can be roughly approximated by the increase in the Glauert similarity parameter, $\beta = 1/\sqrt{1-M^2}$, although the drag of both the floating fairing and the winged configurations tested increased more rapidly due to their low surface pressures and correspondingly low critical Mach numbers.

5. The wing installation used in this test, with a high location on the fuselage and an incidence of 8.5 degrees, was unsatisfactory in that premature flow separation occurred in the wing root region. Because of the extremely high pressure gradients in the region of the aft pylon and wing upper surface, design of effective wing root-pylon junctions is critical, especially for high wing incidence installations.

6. Wing loading and carry-over of wing lift across the fuselage is dependent upon the geometry of the rotor head pylon area. Therefore, while theoretical estimates of wing loading and wing-fuselage load sharing are helpful for preliminary design, the load sharing characteristics of a particular configuration should be determined experimentally.

7. Rotor head RPM had no consistent significant effect on either rotor head drag or total drag.

8. Data obtained at various BLC operating conditions for the floating fairing configuration indicated that accidental shutdown of the BLC system in flight should not cause serious trim changes to the aircraft.

9. The test results indicate that significant improvements in the drag characteristics of rotary wing aircraft can be achieved by careful design and experimental development. The test data suggest that reducing the frontal area of the rotor head is particularly important in achieving satisfactory fairings for high flight speeds.

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TABLE I. MODEL COMPONENT SUMMARY		
Symbol	Configuration	Figure
F	Fuselage With V-tail	3, 5, 6
W	Wing	5, 7
P_1	Rigid Fairing Pylon	5, 10
P_2	Floating Fairing Pylon	5, 9
BLC	Boundary Layer Control Cylinder and Afterbody	8
F_R	Rigid Fairing with 2-Foot-Diameter Blade Stubs	4c
F_f	Floating Fairing with 2-Foot-Diameter Blade Stubs	4b
H_1	Rotor Head, With Spacers, Without 2-Foot-Diameter Blade Stubs	4a
H_2	Rotor Head, With Spacers and 2-Foot-Diameter Blade Stubs	4a
H_3	Rotor Head, Without Spacers, With 2-Foot-Diameter Blade Stubs	4a
S	Rotor Shaft, Without Rotor Head	4a

TABLE II. MODEL CONFIGURATION SUMMARY

Configuration	Tunnel Balance Data	Rotor Balance Data	Pylon and Wing Pressures	Tuft Photos
F	X			
FP_1	X		X	X
FP_2	X		X	X
FP_2BLC	X			
FS	X	X		
FH_1	X	X		
FH_2	X	X		
FH_3	X	X		
FF_R	X	X		
FF_f	X	X		
FP_1H_2	X	X	X	
FP_1F_R	X	X	X	X
FP_2BLCH_3	X	X		
FP_2BLCF_f	X	X	X	X
W	X		X	X
FW	X		X	X
FWP_1	X		X	X
FWH_3	X	X		X
FWP_1H_3	X	X	X	X
FWP_1F_R	X	X	X	X
FWP_2BLCF_f	X	X	X	X

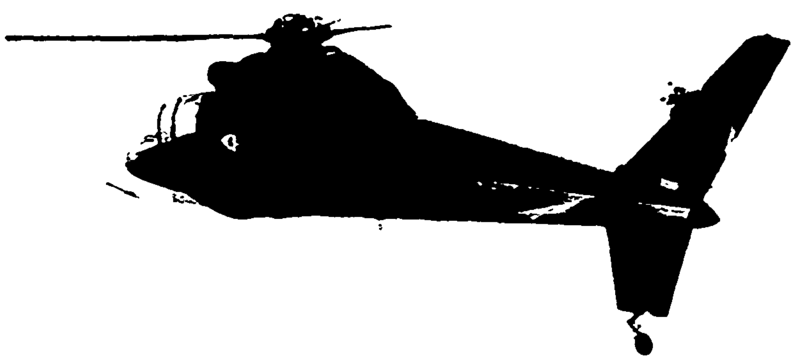
TABLE III. MODEL COMPONENT FRONTAL AREAS		
Component	Frontal Area, Square feet	
	Model Scale	Full Scale
Fuselage, F	1.630	125.5
Rigid Fairing Pylon, P_1	.250	19.3
Floating Fairing Pylon, P_2	.250	19.3
Rigid Fairing, F_R		
Rotating Component	.282	21.7
Nonrotating Component	.083	6.4
Floating Fairing, F_f		
Rotating Ellipsoid	.440	33.9
BLC Cylinder	.082	6.3
Bare Rotor Head, H_1	.220	16.9
H_2	.227	17.5
H_3	.215	16.6
Wing, W (Planform Area)	6.19	475
Rotor Shaft, S	.059	4.5

TABLE IV. DRAG OF THE CONFIGURATIONS TESTED AT EACH TEST MACH NUMBER, AS A PERCENTAGE OF THE DRAG AT M = 0.2; α = 0 DEG FOR WINGLESS CONFIGURATIONS, L/q = 292 FT^2 FOR CONFIGURATIONS WITH WING

Configuration	Mach Number				
	.2	.3	.4	.5	.6
F	100	100	100	106	113
FP_1	100	98	98	110	119
FP_2	100	98	102	107	124
FP_2BLC	100	-	105	-	132
FS	100	-	103	-	
FH_2	100	102	105	106	115
FF_R	100	99	100	106	120
FF_f	100	100	102	113	116
FP_1H_2	100	98	99	112	125
FP_1F_R	100	97	104	113	132
FP_2BLCH_3	100	-	110	-	132
FP_2BLCF_f*	100	-	104	-	160
W	100	100	100	100	98
FW	100	97	99	103	113
FWP_1	100	98	99	103	118
FWH_3	100	105	110	119	135
FWP_1H_3	100	102	105	116	140
FWP_1F_R	100	100	106	126	-
FWP_2BLCF_f*	100	107	107	-	163
Glauert**	100	103	107	114	123

* Drags taken at optimum f_μ

** Similarity parameter referred to M = 0.2; $= \sqrt{1-.2^2}/\sqrt{1-M^2}$



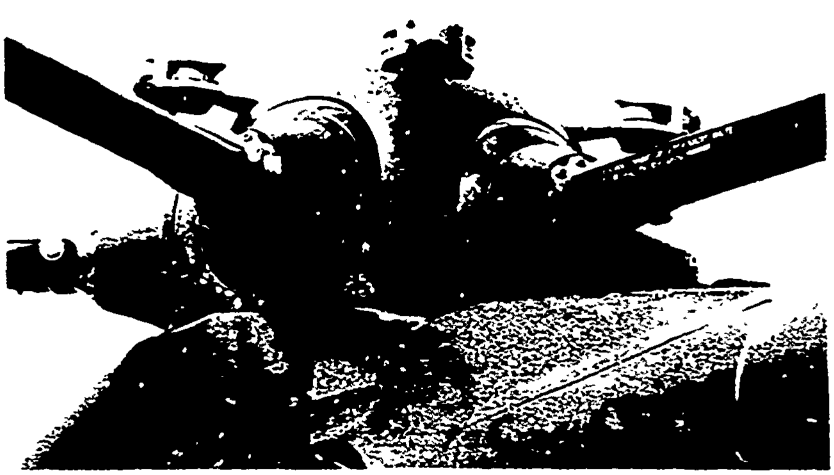


Figure 1. Rigid Rotor Head Fairing Installed on the Sikorsky S-67 Blackhawk.

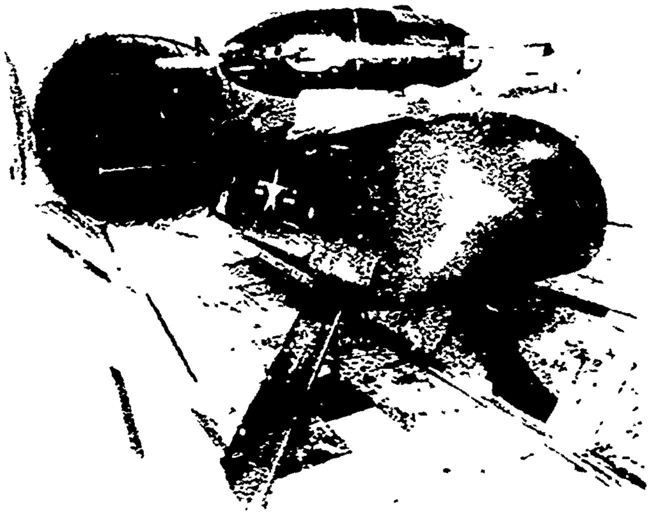
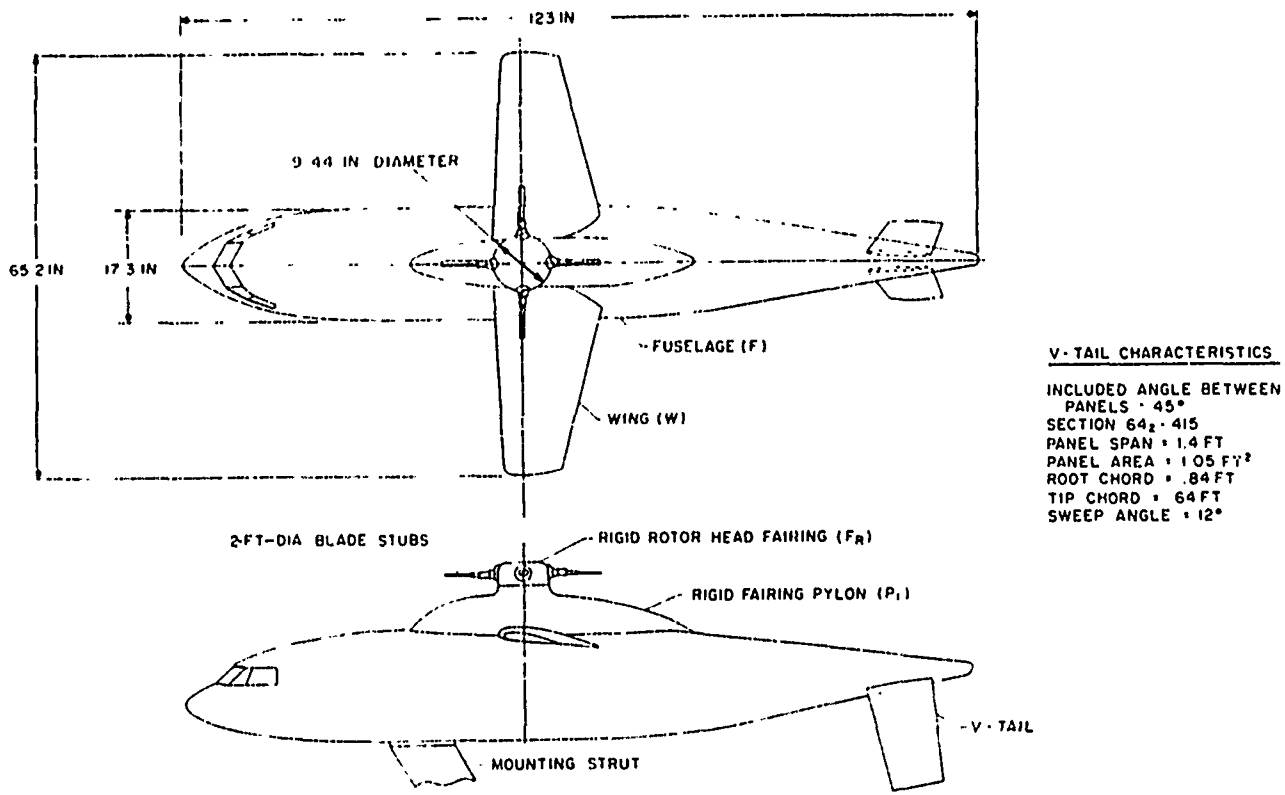
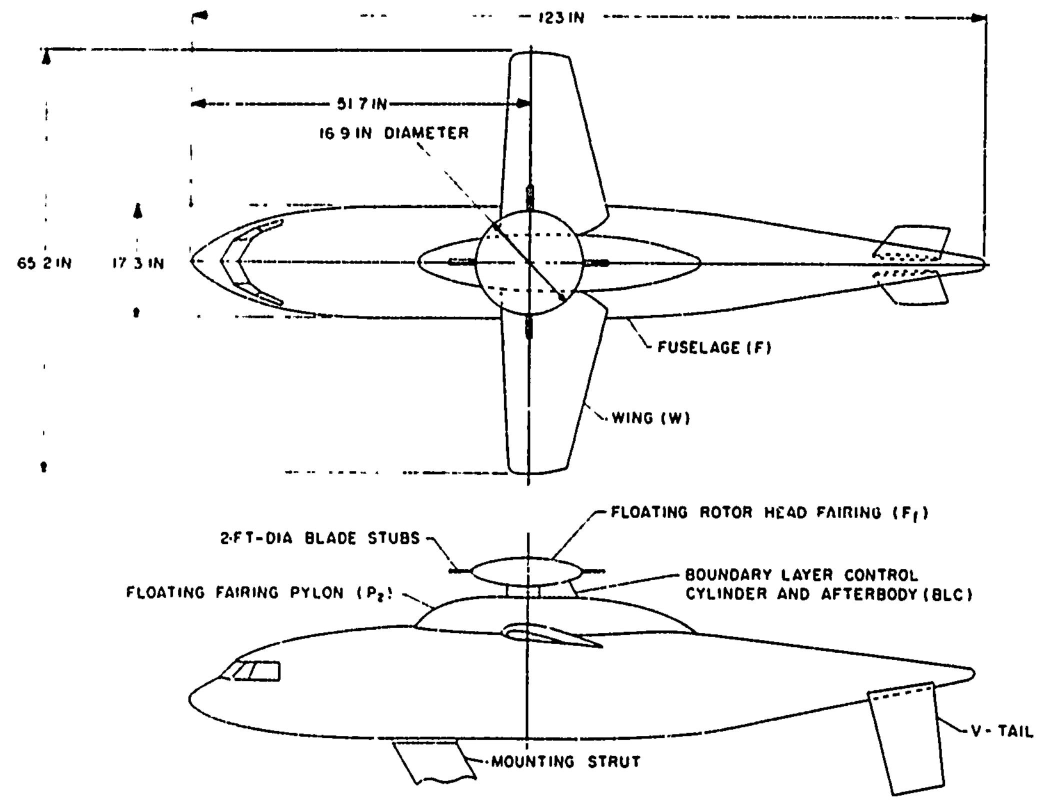


Figure 2. Full-Scale S-61 Floating Fairing Model.



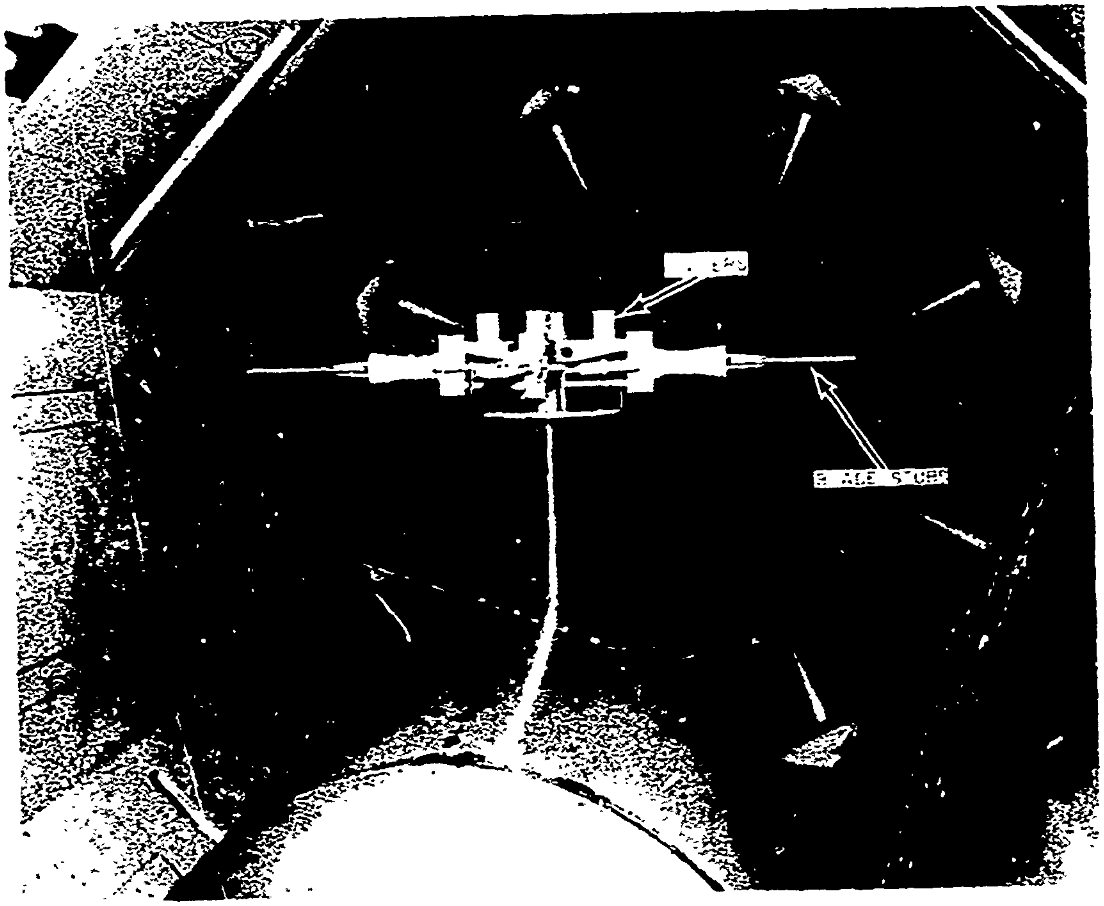
(a) RIGID ROTOR HEAD FAIRING CONFIGURATION (FWP$_1$F$_R$)

Figure 3. Sikorsky High-Speed Rotorcraft Drag Model.



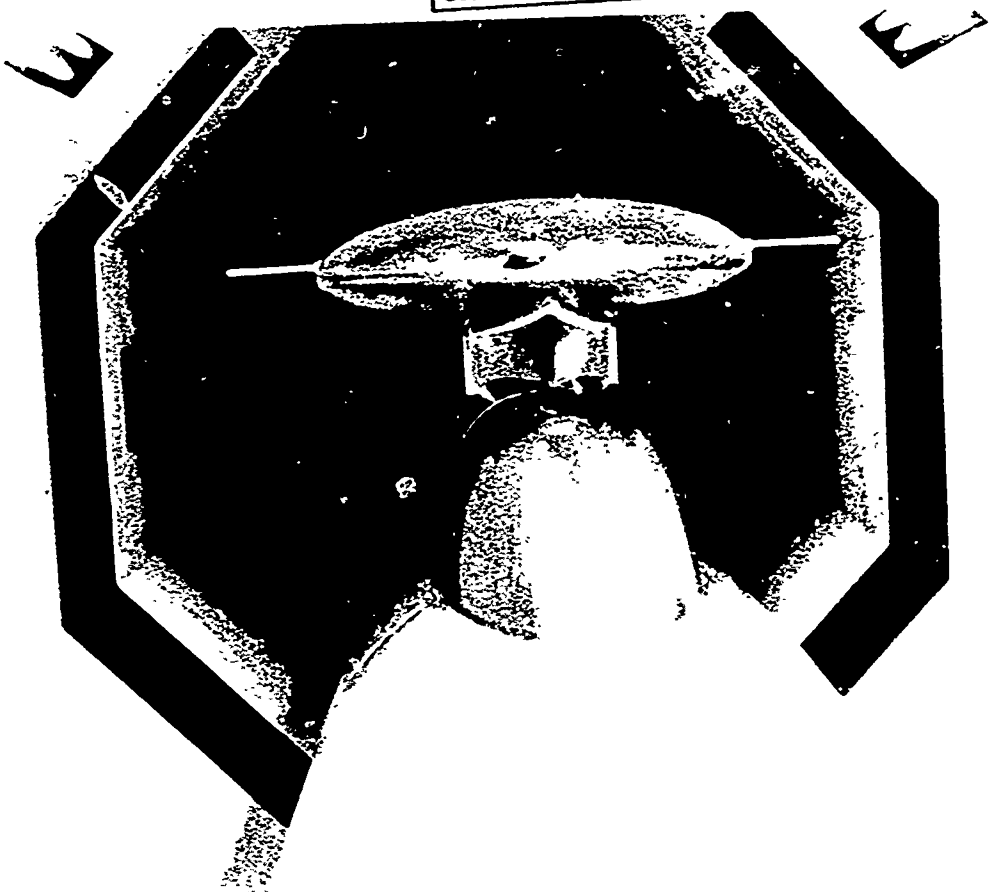
(b) FLOATING ROTOR HEAD FAIRING CONFIGURATION (FWP_2BLCF_f)

Figure 3. Concluded.



(a) Unfaired Rotor Head

Figure 4. Model Rotor Head Configuration Photographs.



(b) Floating Rotor Head Fairing
(Looking Forward)

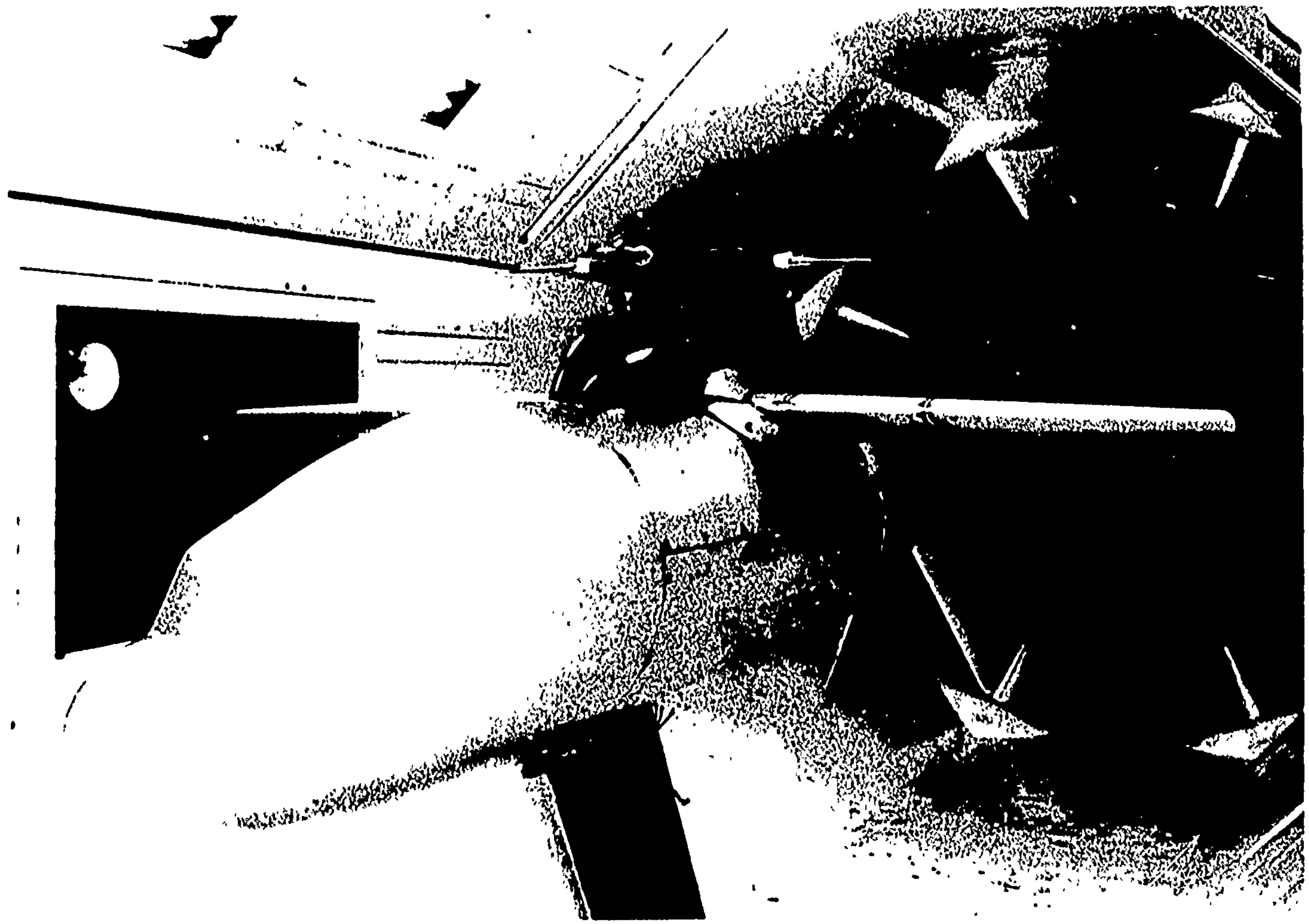
Figure 4. Continued.

(c) Rigid Rotor Head Fairing

Figure 4. Concluded.

(a) Floating Fairing Configuration

Figure 5. Sikorsky High-Speed Rotorcraft Drag Model Installed in the United Aircraft Research Laboratories 8-Foot Main Wind Tunnel.



(b) Rigid Fairing Configuration

Figure 5. Concluded.

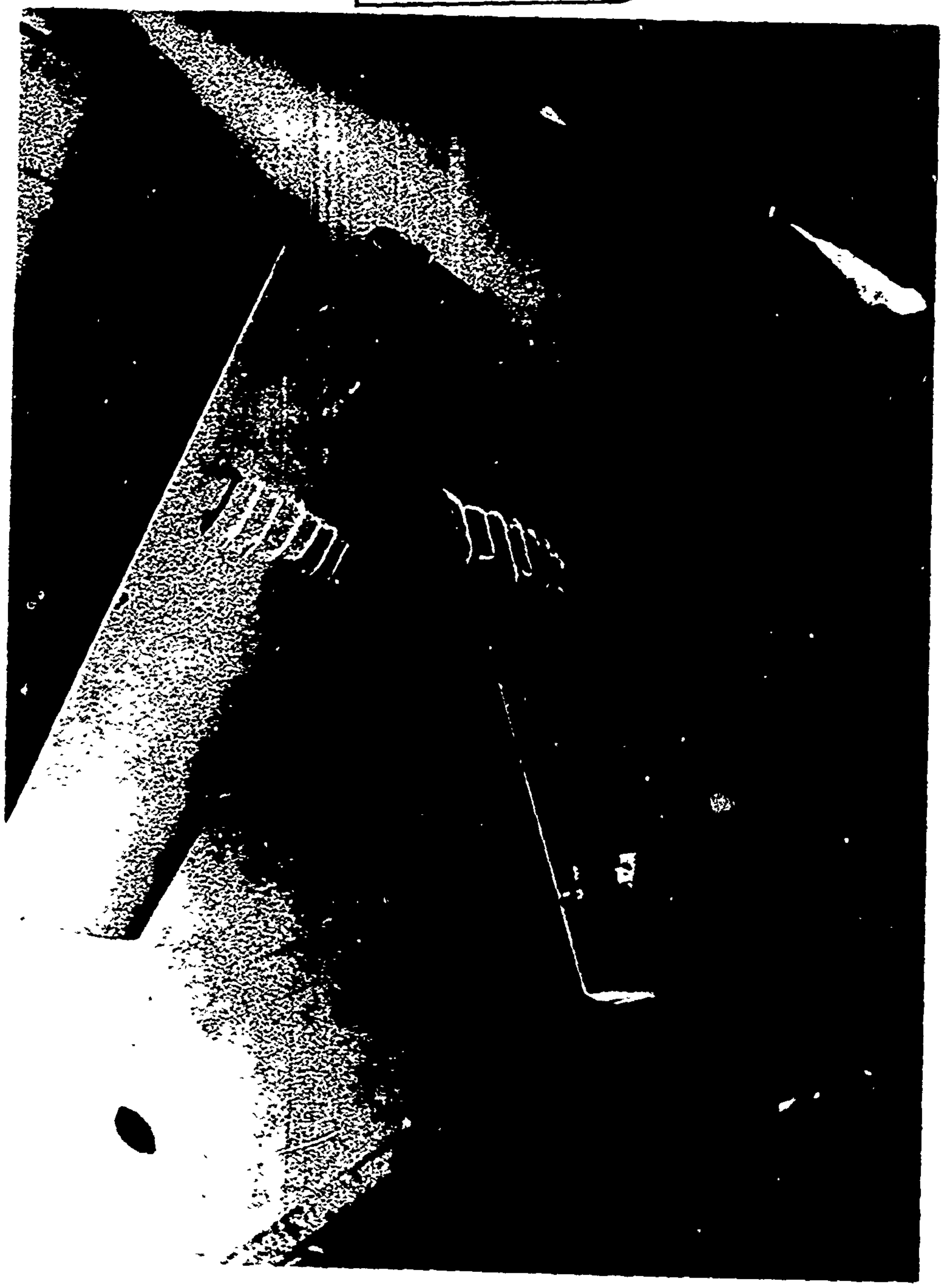
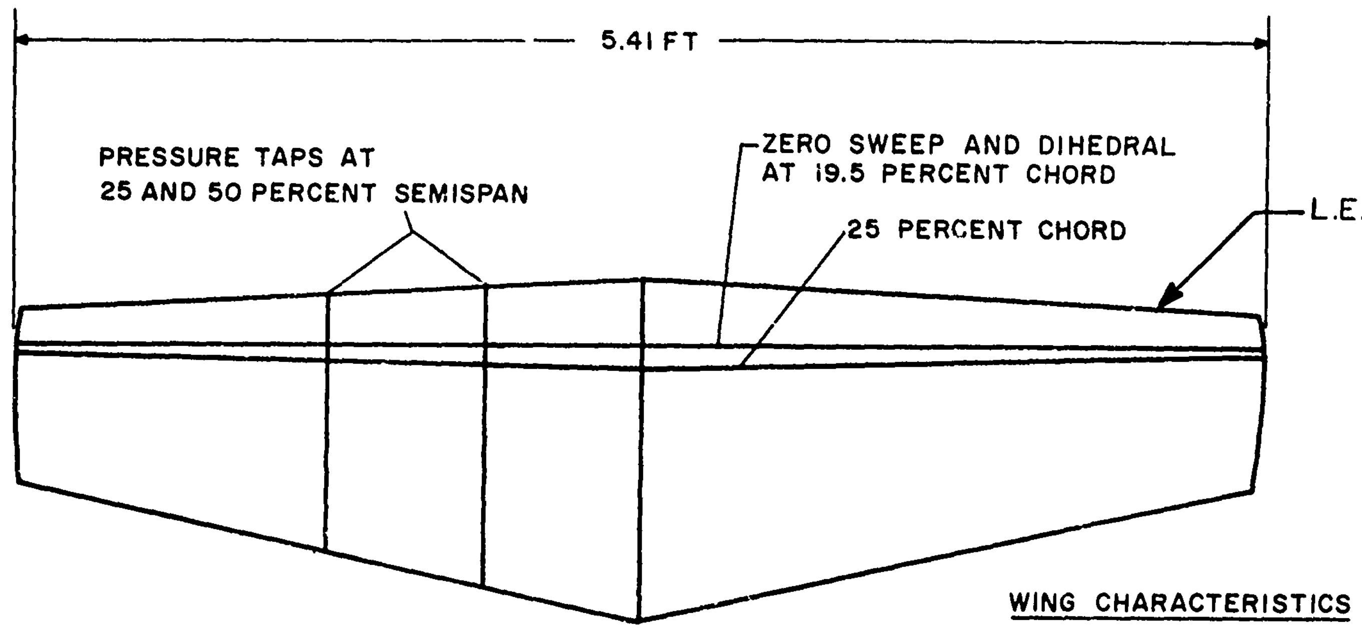


Figure 6. Model V-Tail.



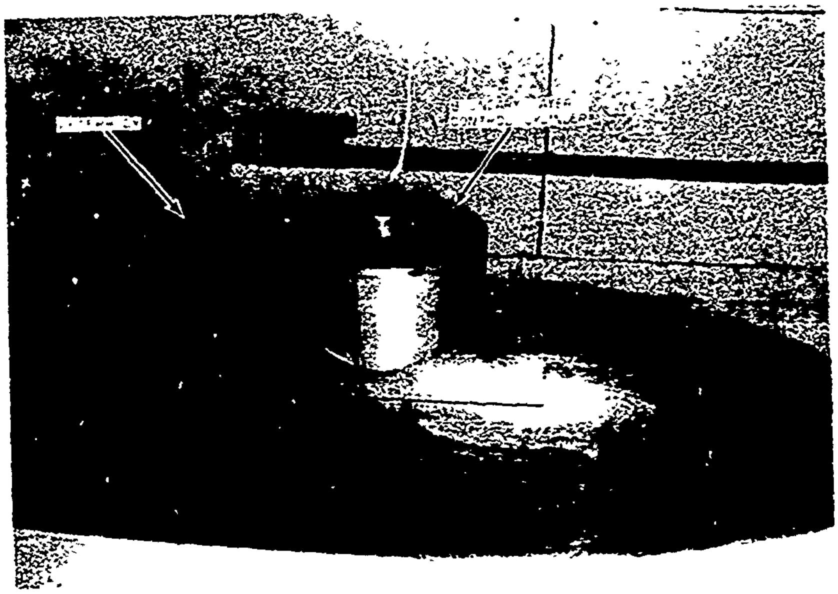
WING PRESSURE TAP LOCATIONS IN PERCENT CHORD :

UPPER SURFACE	2 5 7.5 10 15 20 25 30 35 40 50 60 70 80
LOWER SURFACE	5 10 15 20 30 40 50 60 80

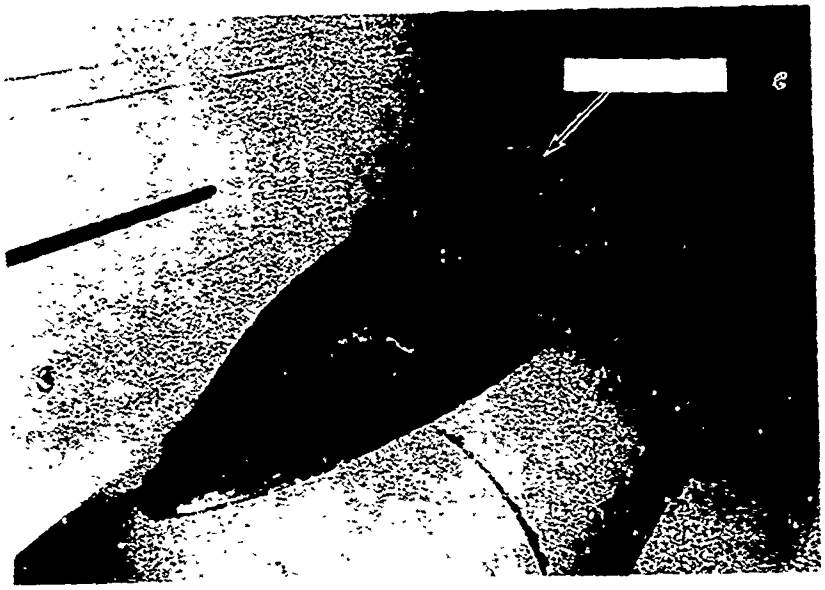
WING CHARACTERISTICS

SECTION	63_2 A415
SPAN	5.41 FT
ROOT CHORD	1.52 FT
TIP CHORD	0.76 FT
TAPER RATIO	2
ASPECT RATIO	4.75
AREA	6.19 FT^2
INCIDENCE	8.5 DEG

Figure 7. Model Wing.

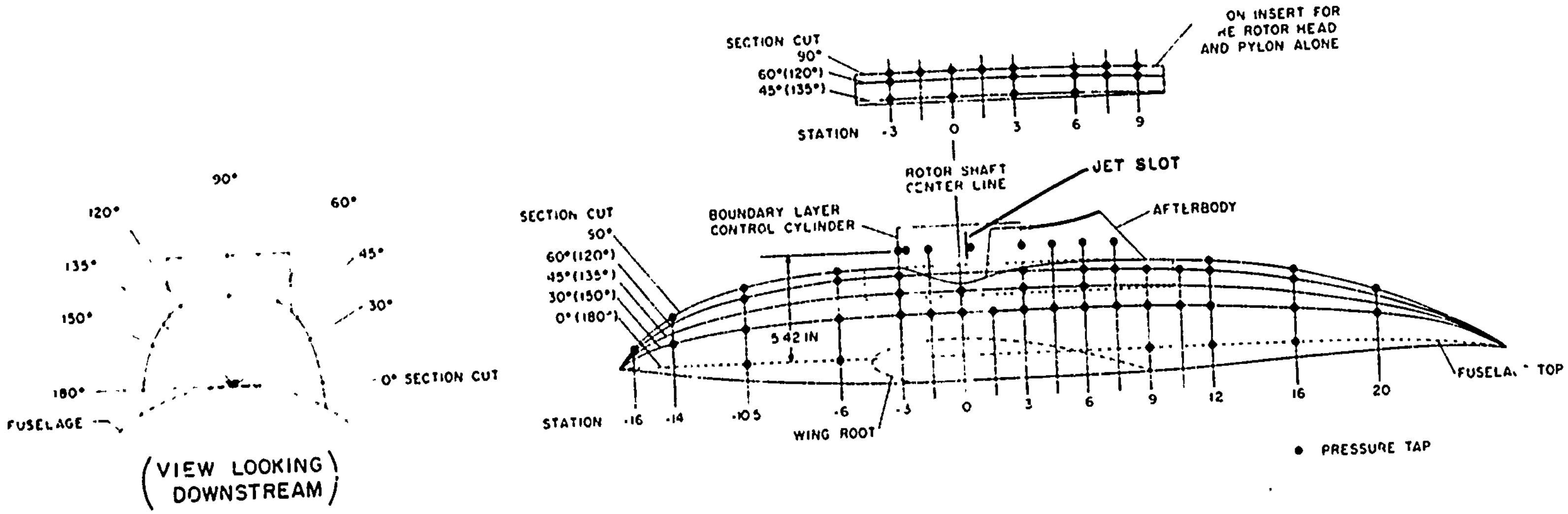


Side View



Rear View

Figure 8. Boundary Layer Cont~ol Cyl:nder and Afterbody.



NOTE TAPS ON BOUNDARY LAYER CONTROL CYLINDER SPACED AT ±30, ±60, AND ±100 DEGREES FROM FRONT

Figure 9. Floating Fairing Pylon.

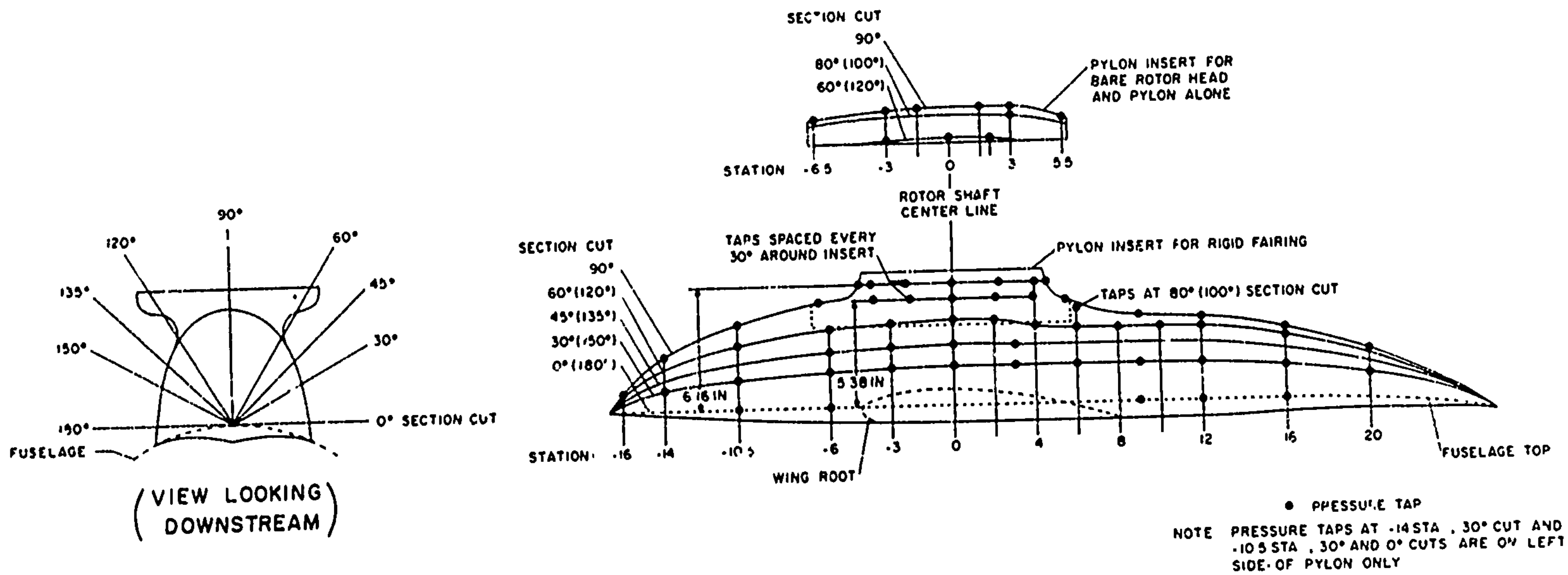


Figure 10. Rigid Fairing Pylon.

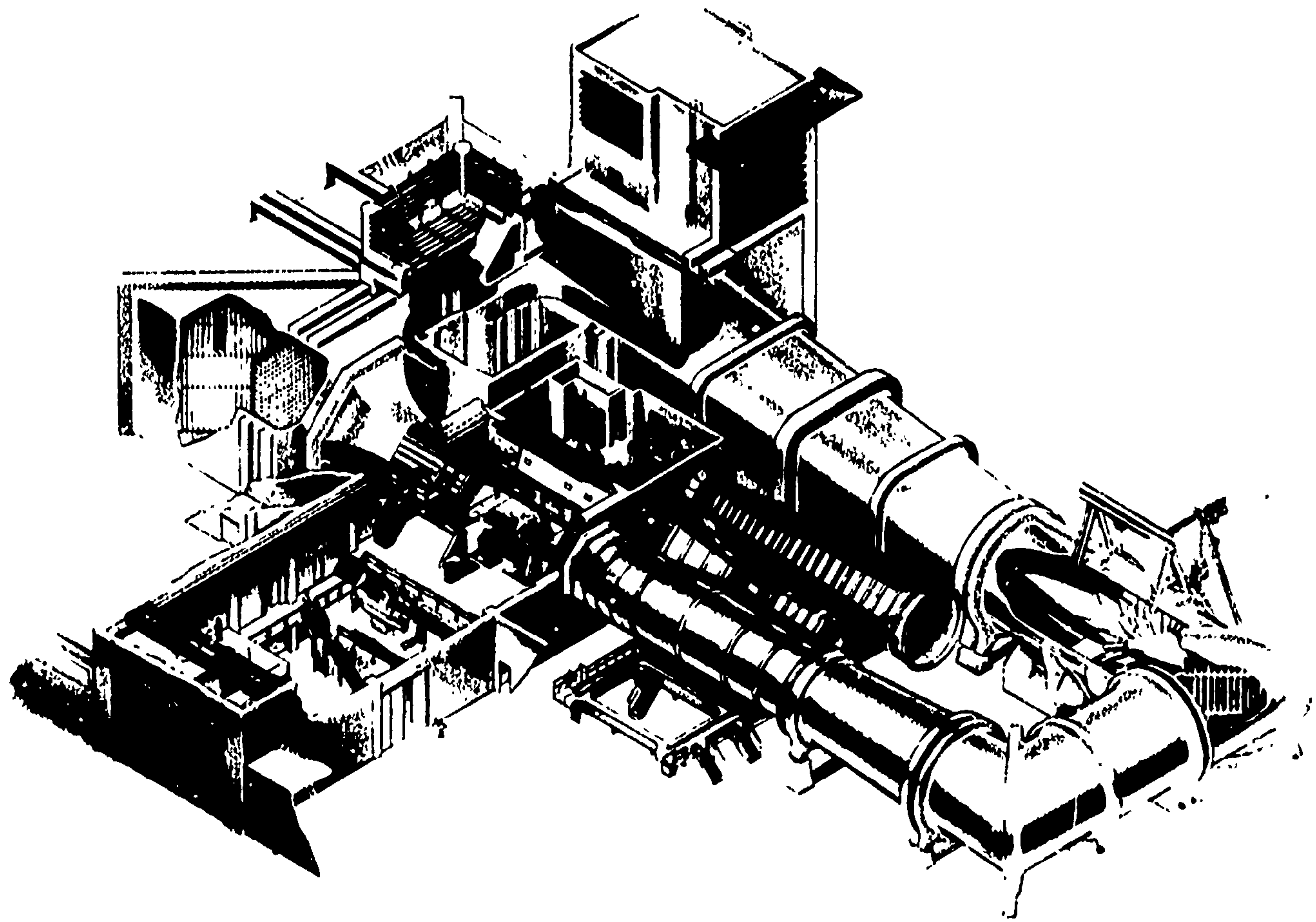


Figure 11. United Aircraft Research Laboratories Main Wind Tunnel.

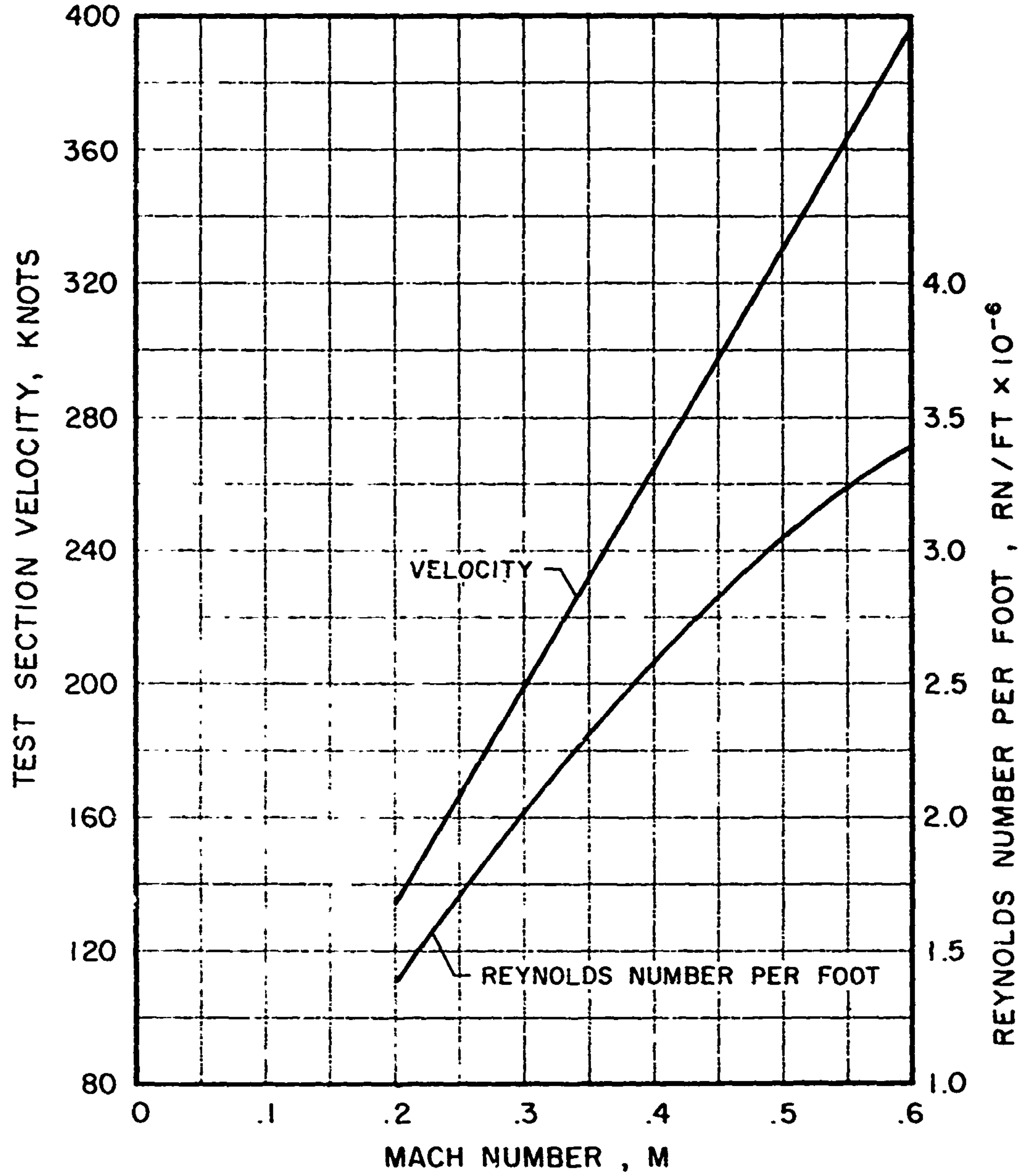


Figure 12. Reynolds Number per Foot and Velocity Versus Test Mach Number.

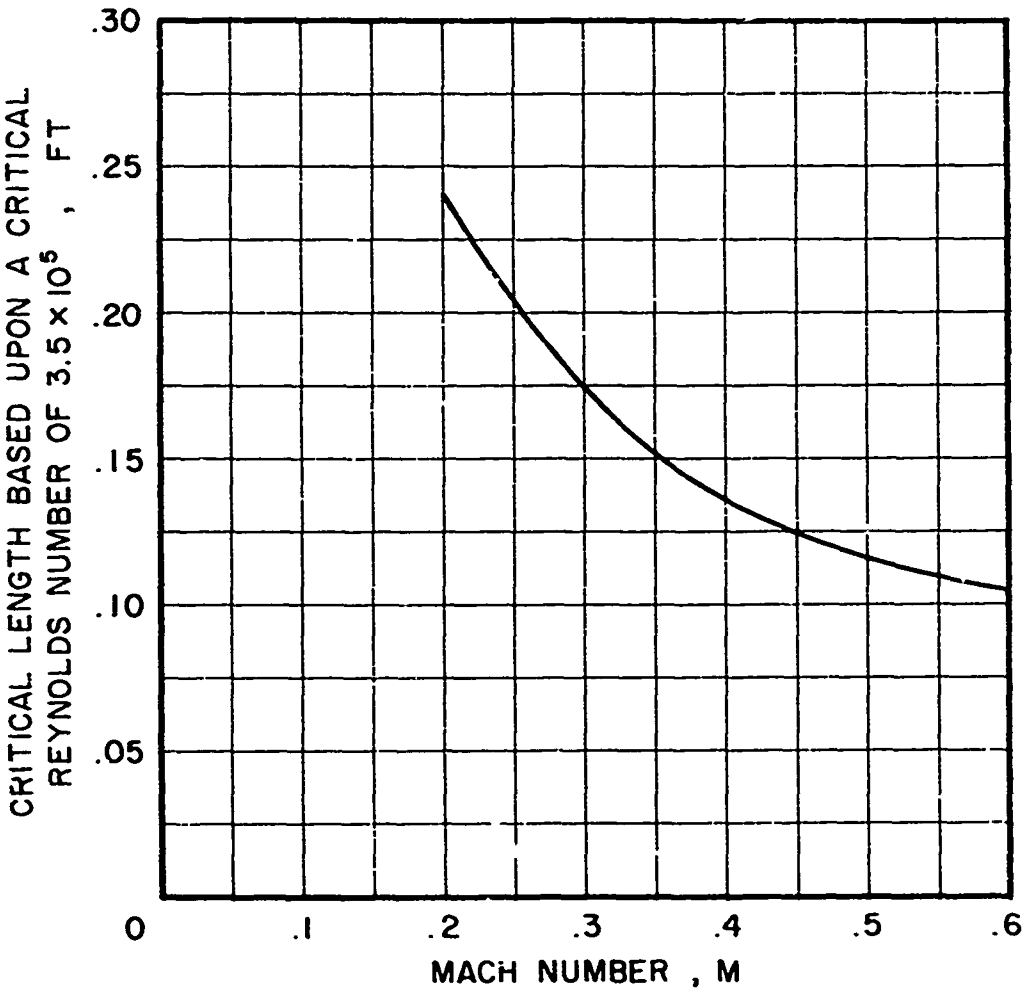


Figure 13. Critical Length Versus Mach Number.

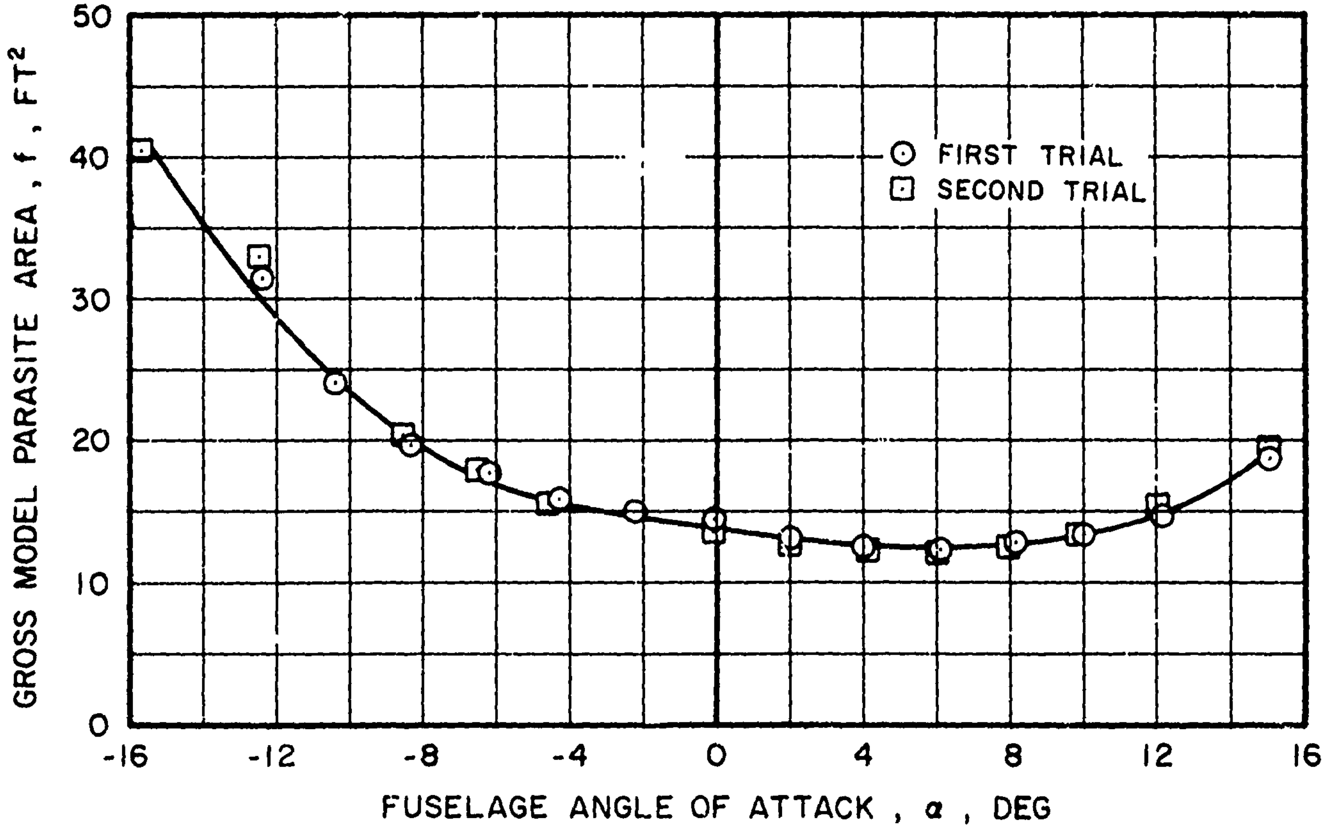
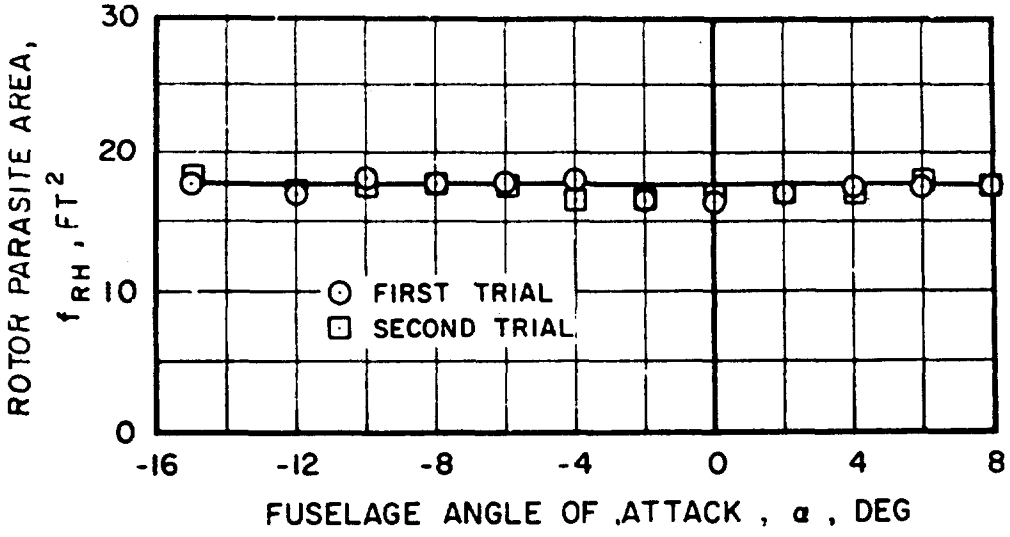
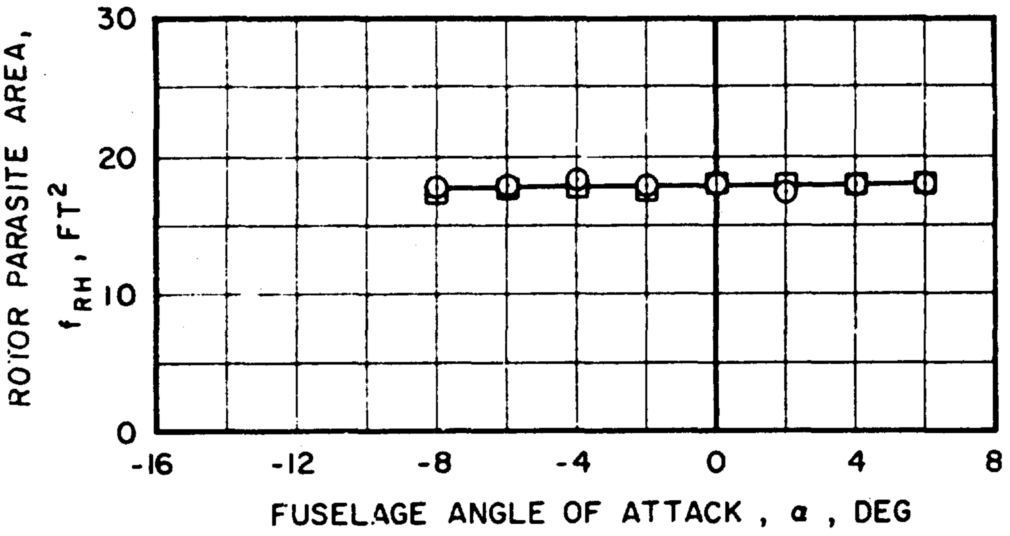


Figure 14. Tunnel Balance Data Repeatability, Configuration F, M = 0.2 .

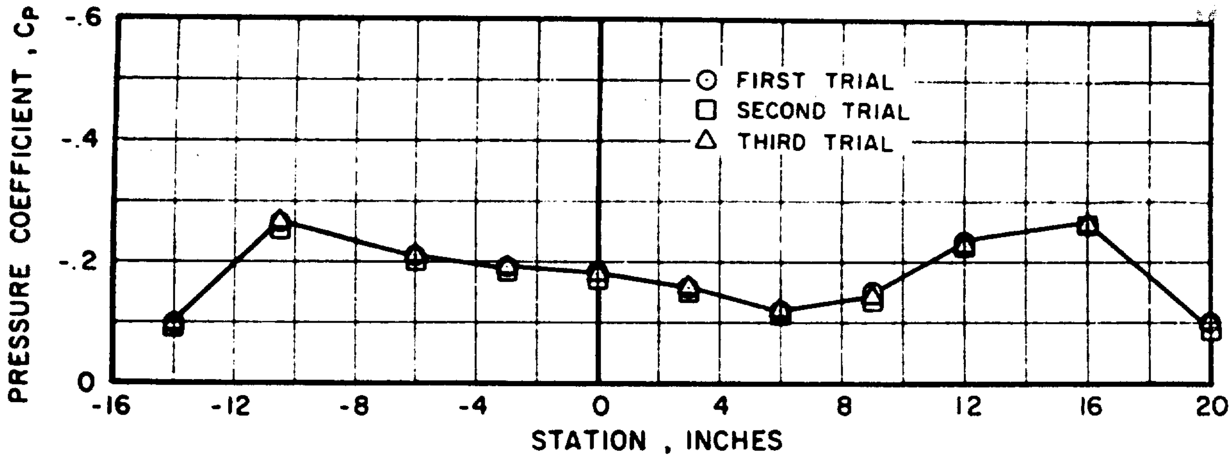


(a) M = 0.2

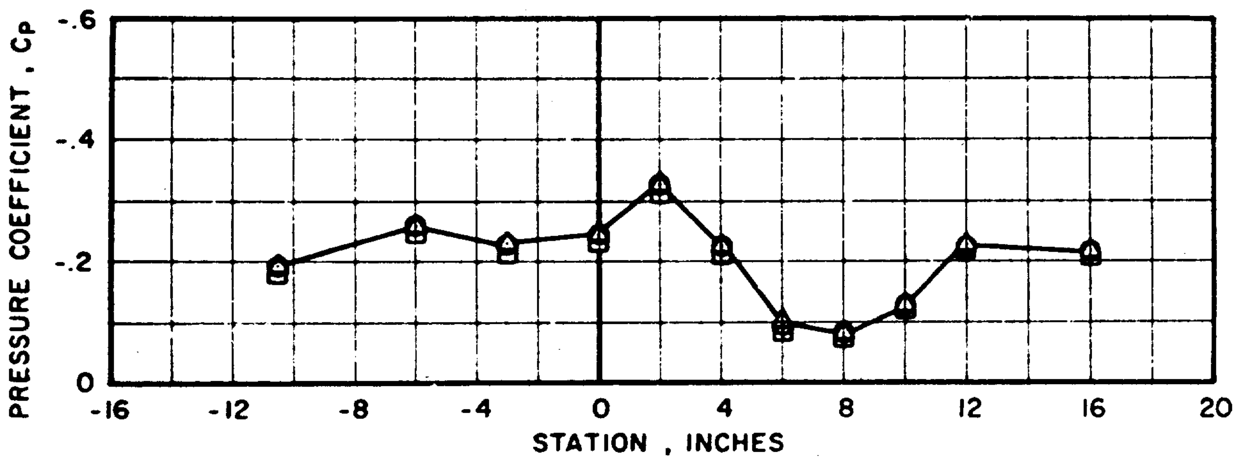


(b) M = 0.4

Figure 15. Rotor Balance Data Repeatability, Configuration FWP_1H_3.



(a) 30-DEGREE SECTION CUT



(b) 60-DEGREE SECTION CUT

Figure 16. Pylon Pressure Coefficient Data Repeatability, Configuration FP$_1$, $M = 0.4$, $\alpha = 0$ Deg.

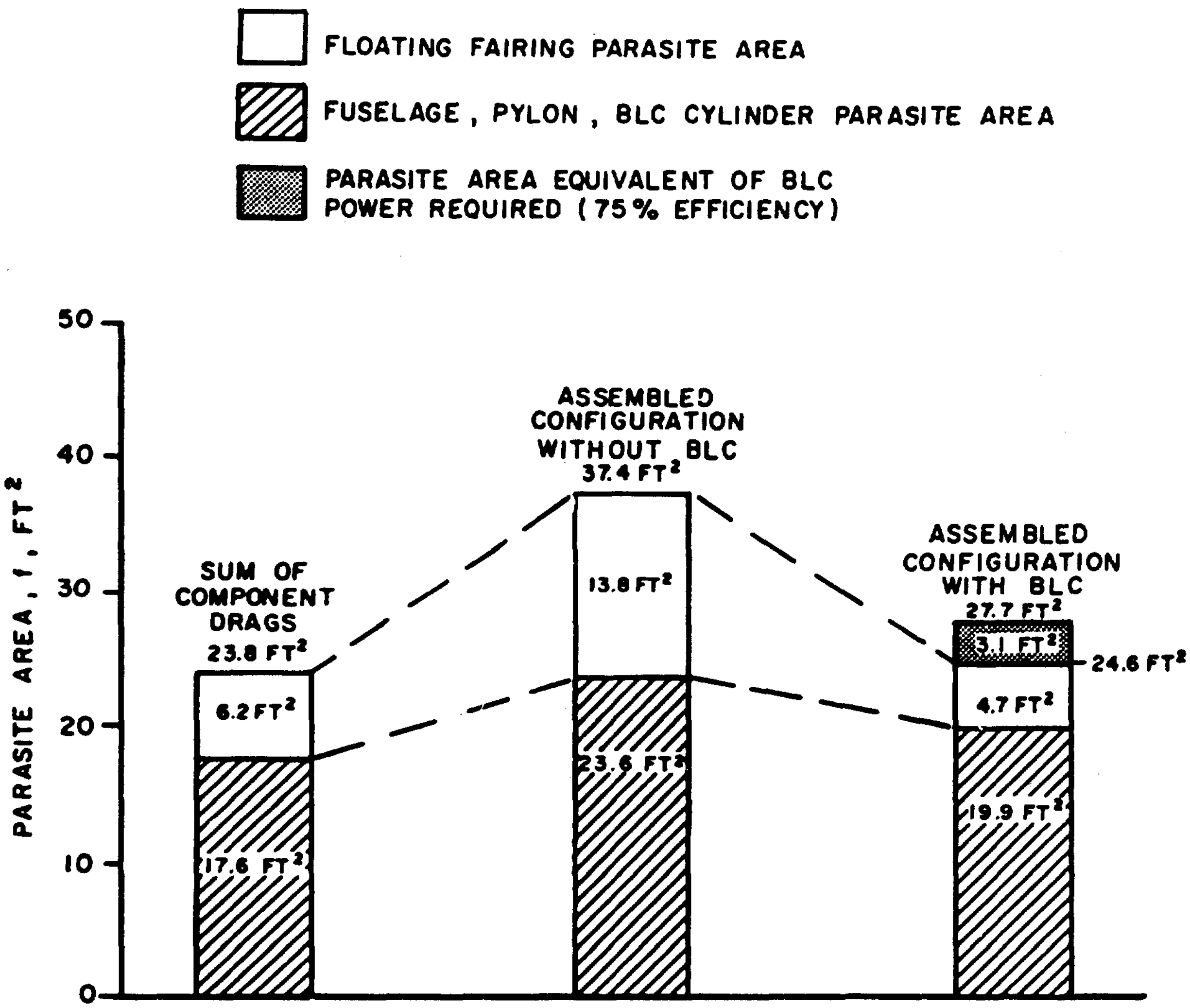


Figure 17. The Effect of Boundary Layer Control on the Drag of the Floating Fairing Configuration FP_2BLCF_f, M = 0.2, α = 0 Deg.

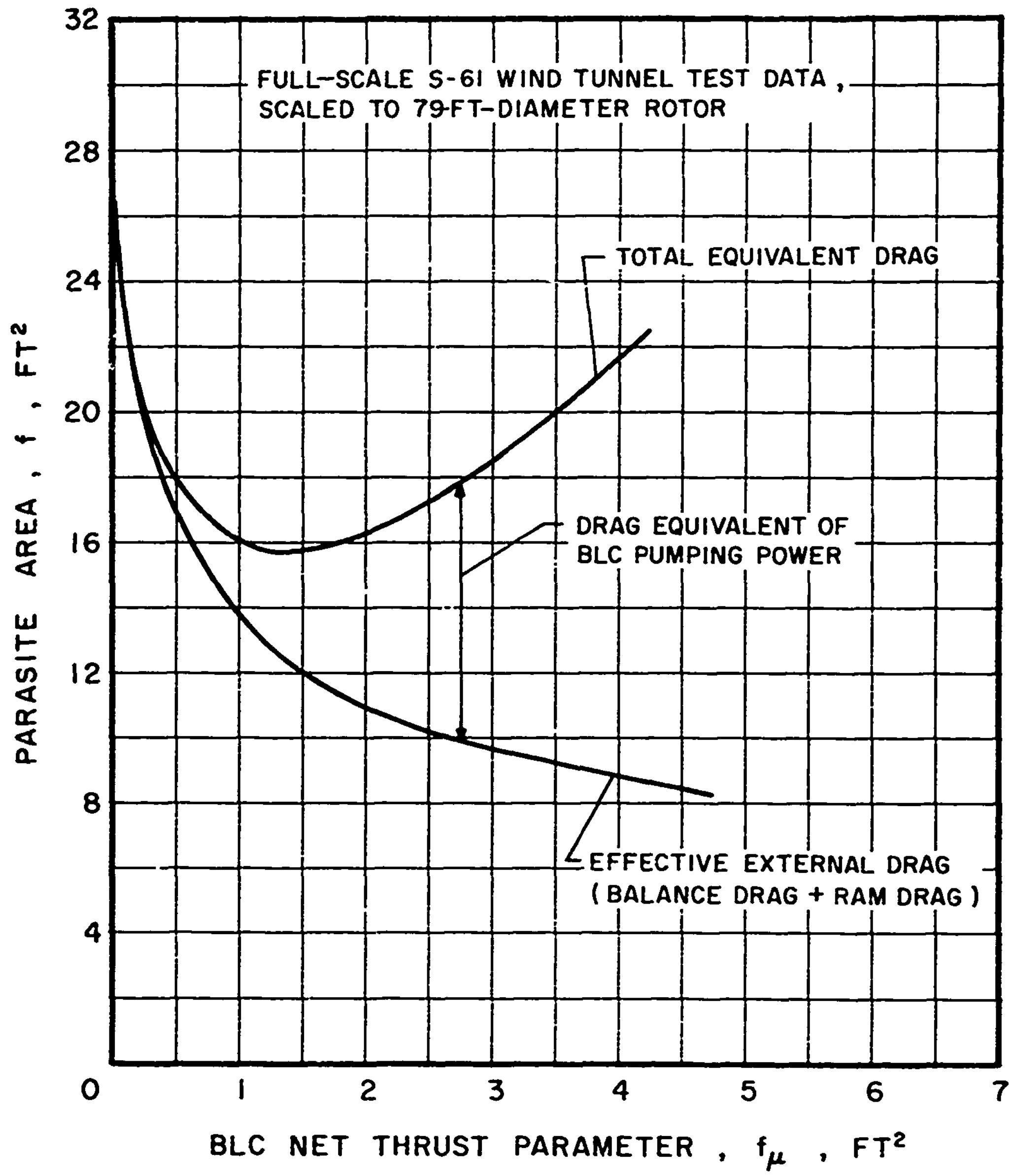


Figure 18. The Effect of Varying BLC Net Thrust Parameter on the Drag Characteristics of a Full-Scale Floating Fairing Model.

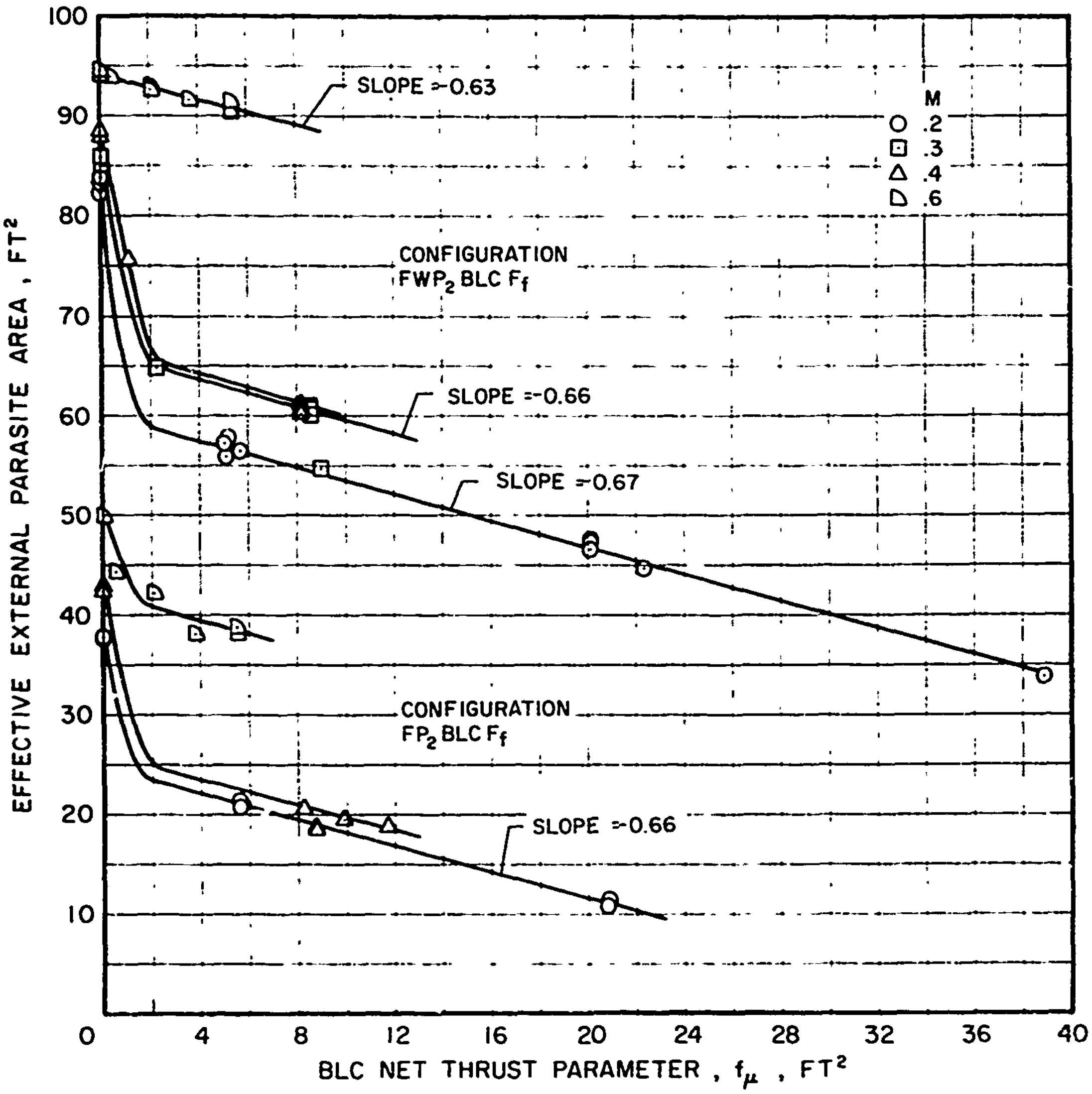
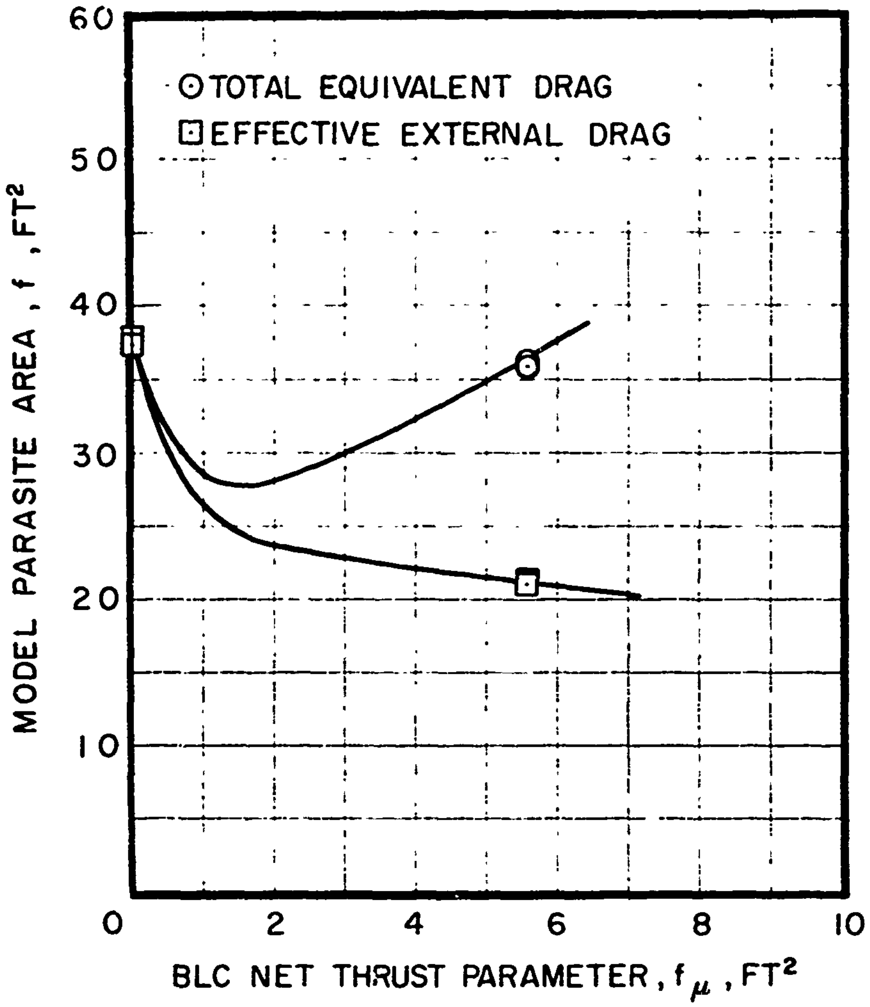
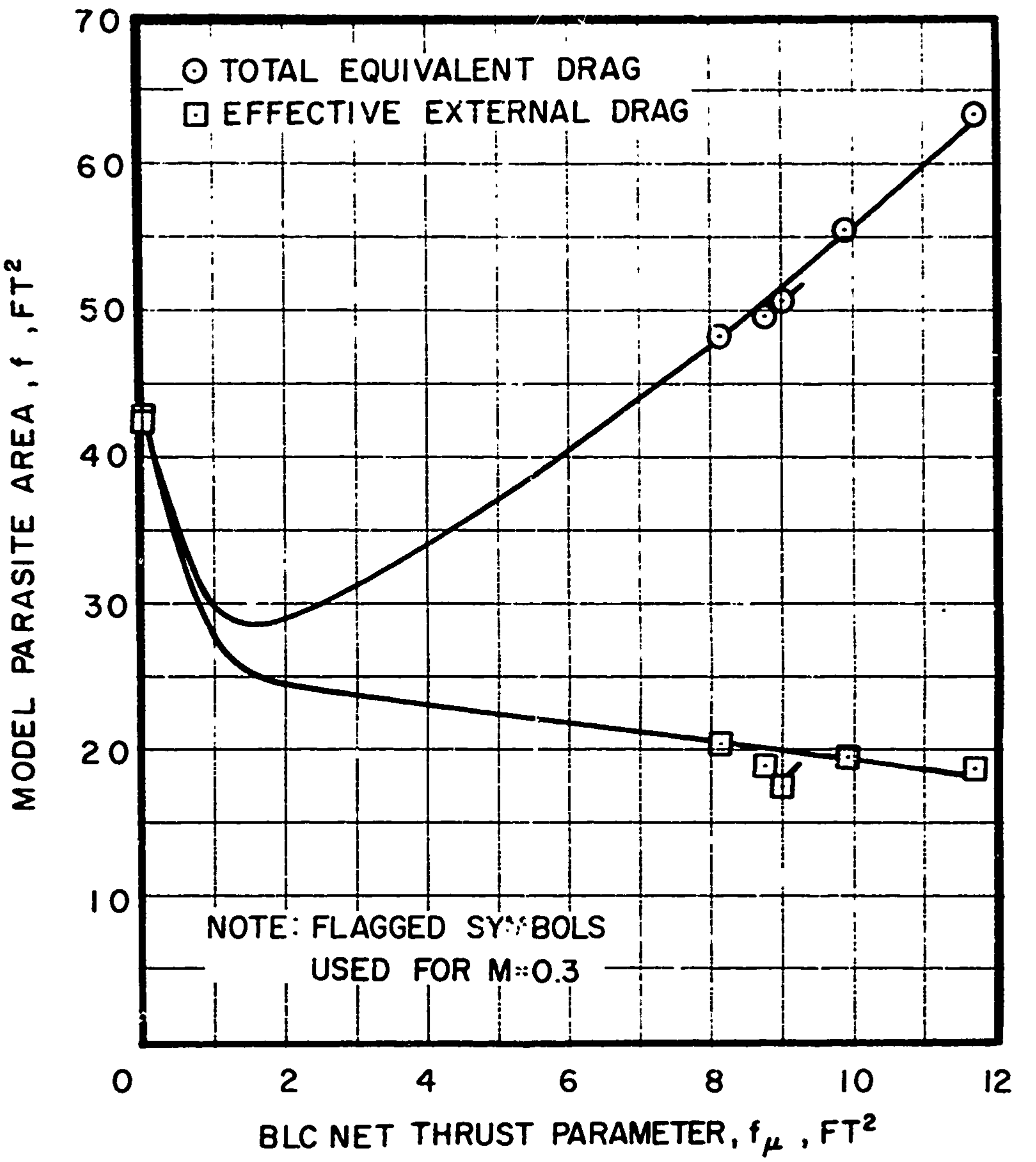


Figure 19. The Effect of Varying BLC Net Thrust Parameter on the Effective External Drag for Two Floating Fairing Configurations, $\alpha = 0$ Deg.



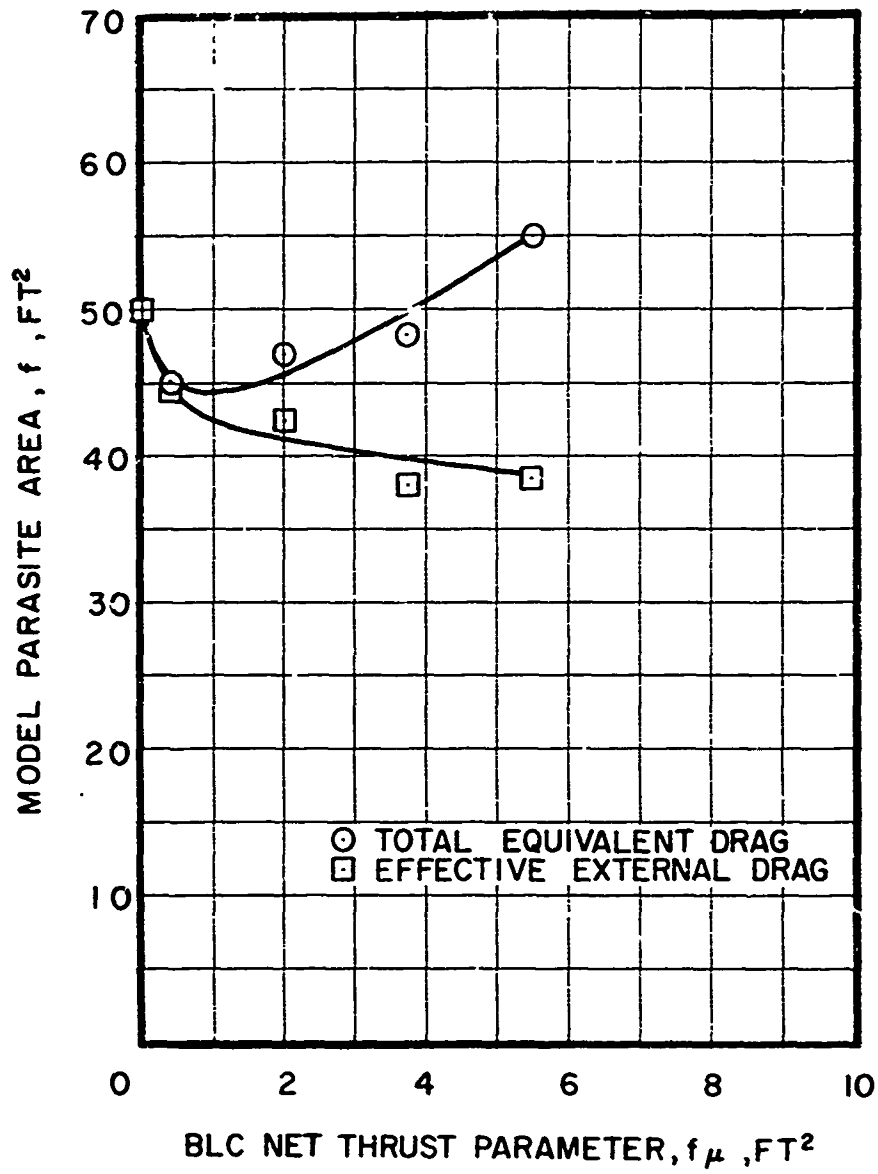
(a) M =0.2

Figure 20. The Effect of Varying BLC Net Thrust Parameter on the Drag Characteristics of the Configuration Without Wing, FP_2BLCF_2, α = 0 Deg.



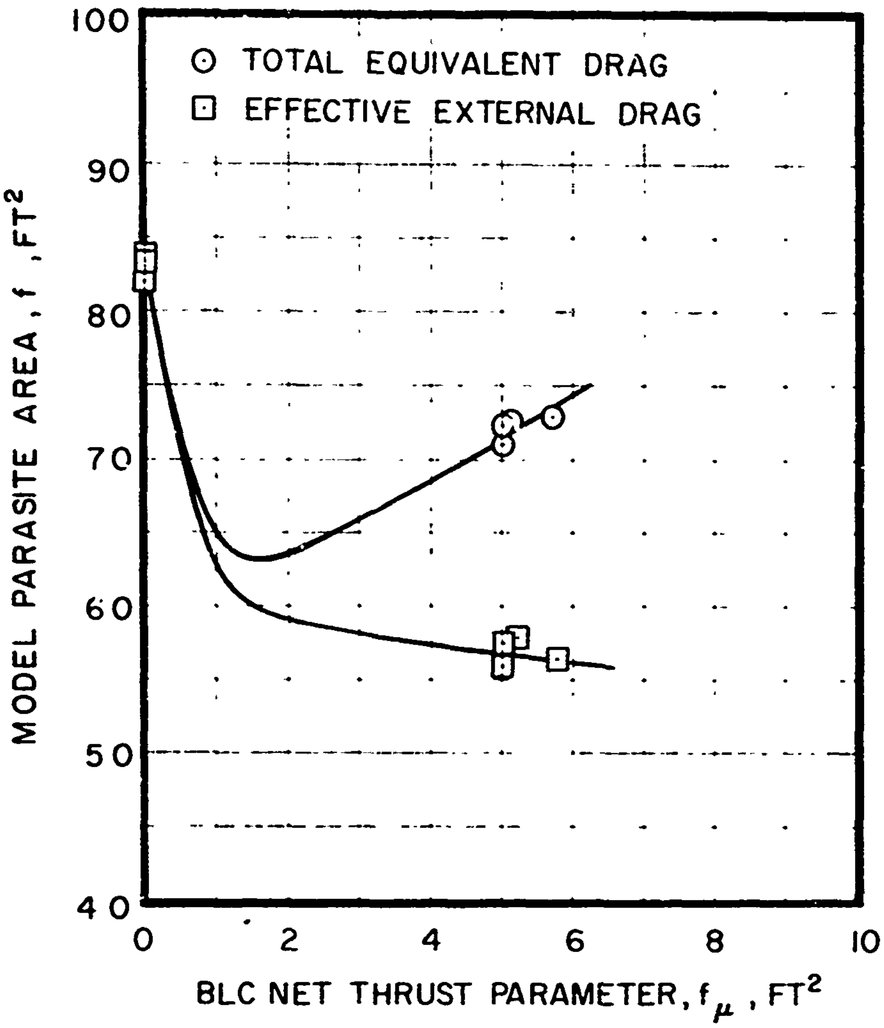
(b) M=0.4 (AND M=0.3)

Figure 20. Continued.



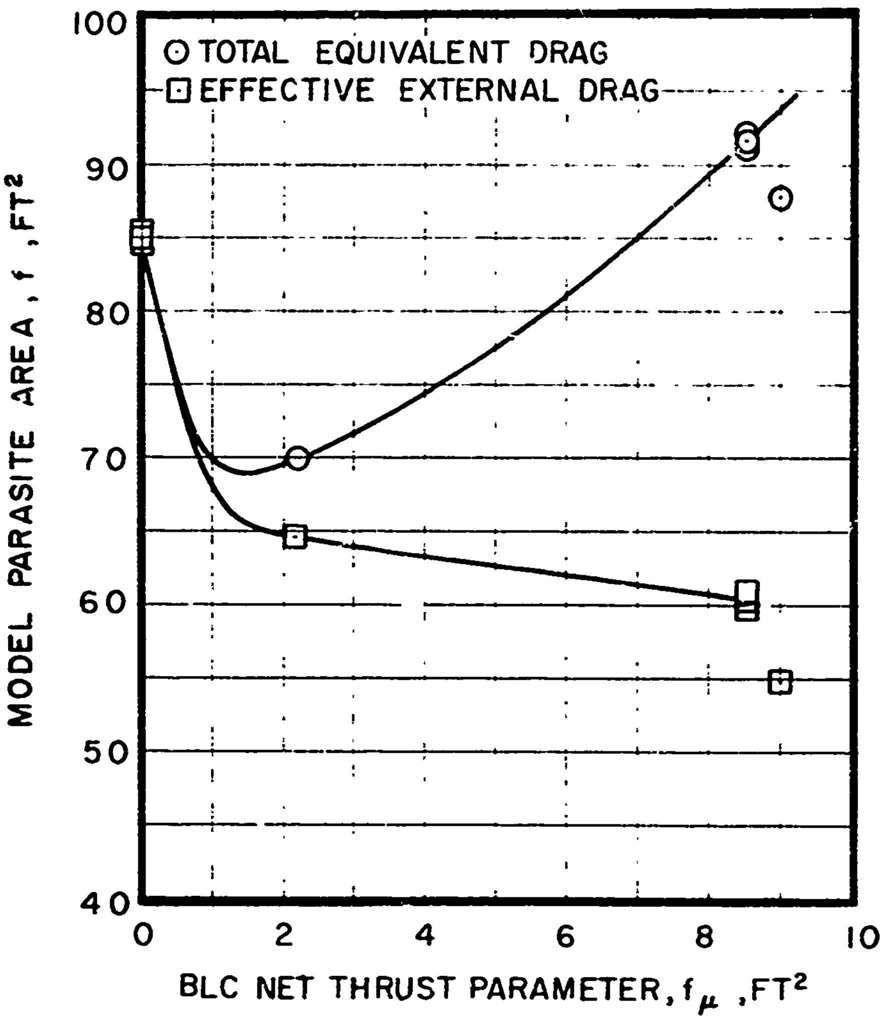
(c) M = 0.6

Figure 20. Concluded.



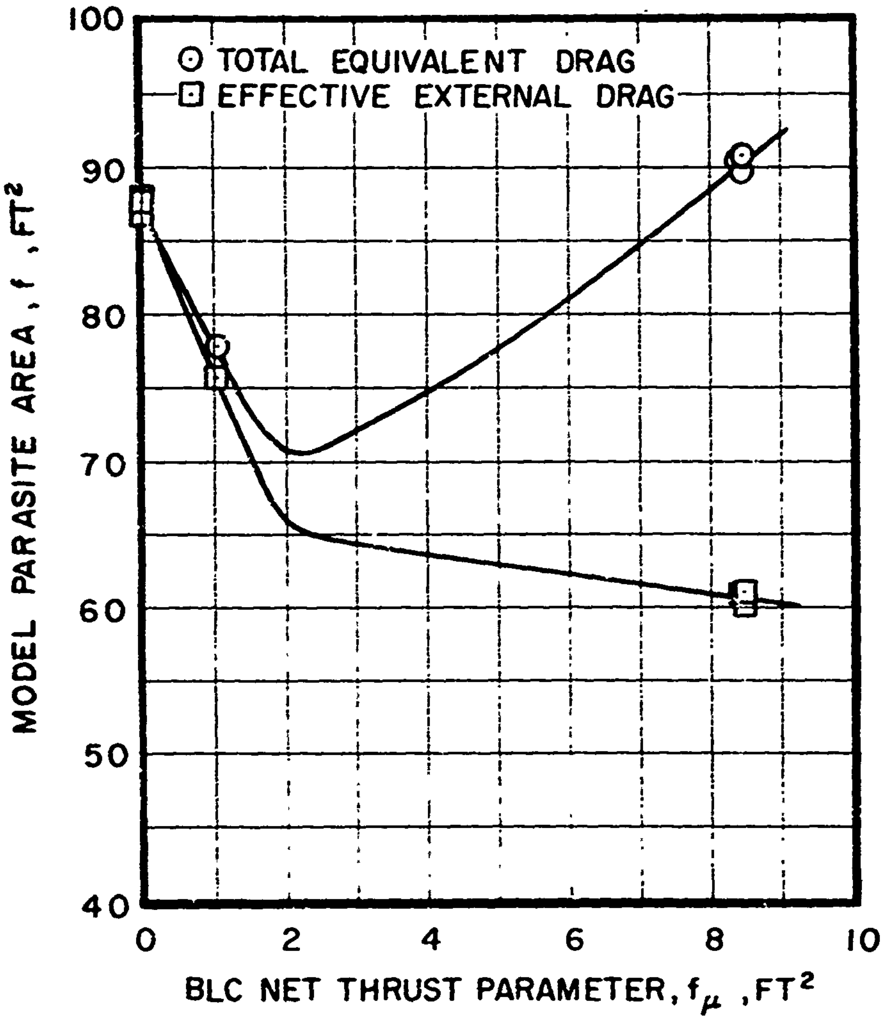
(a) M=0.2

Figure 21. The Effect of Varying BLC Net Thrust Parameter on the Drag Characteristics of the Configuration With Wing, $FWP_2BLC\ F_f$, $\alpha = 0.9$ Deg.



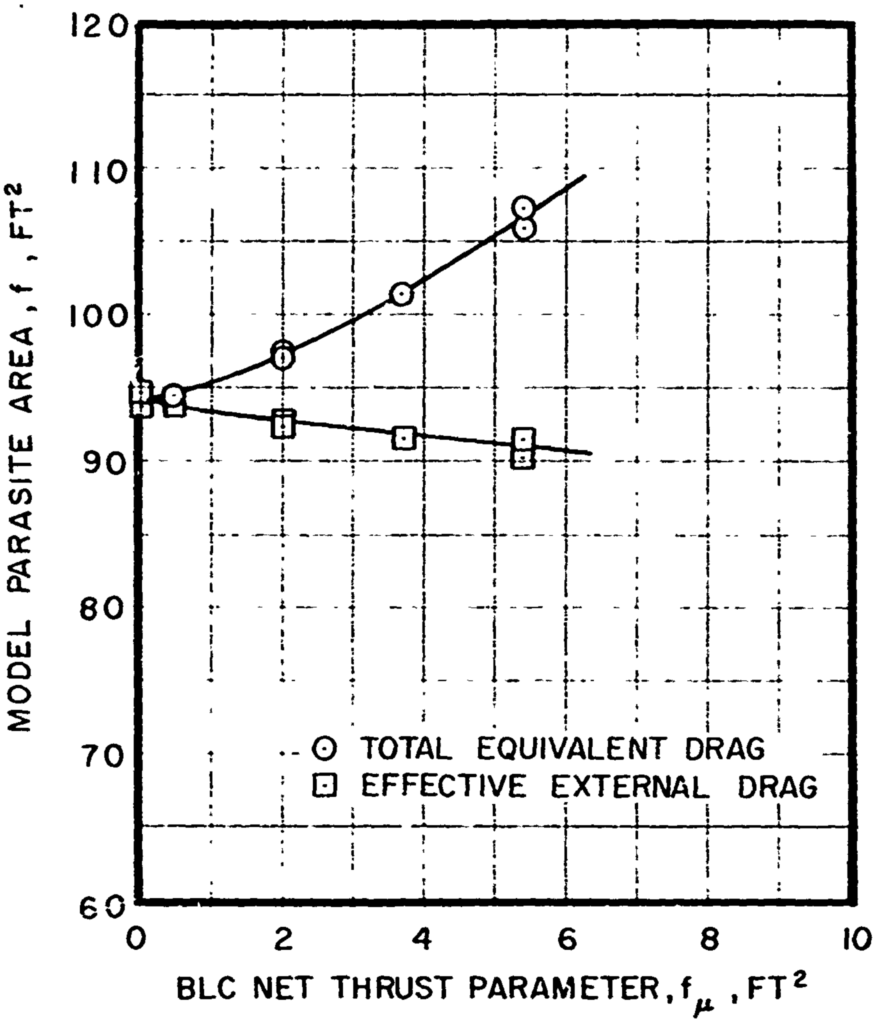
(b) M = 0.3

Figure 21. Continued



(c) M = 0.4

Figure 21. Continued.



(d) M=0.6

Figure 21. Concluded.

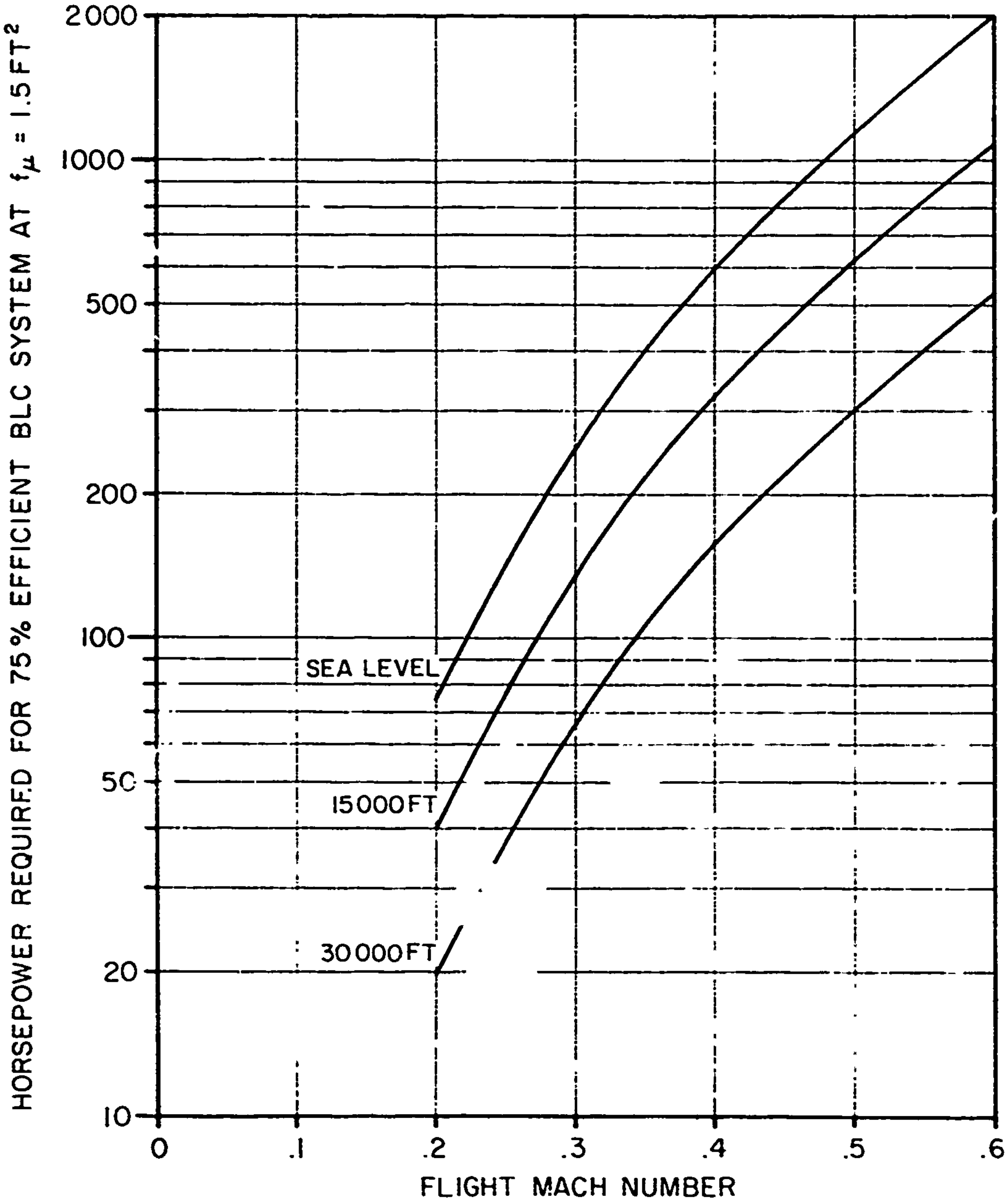
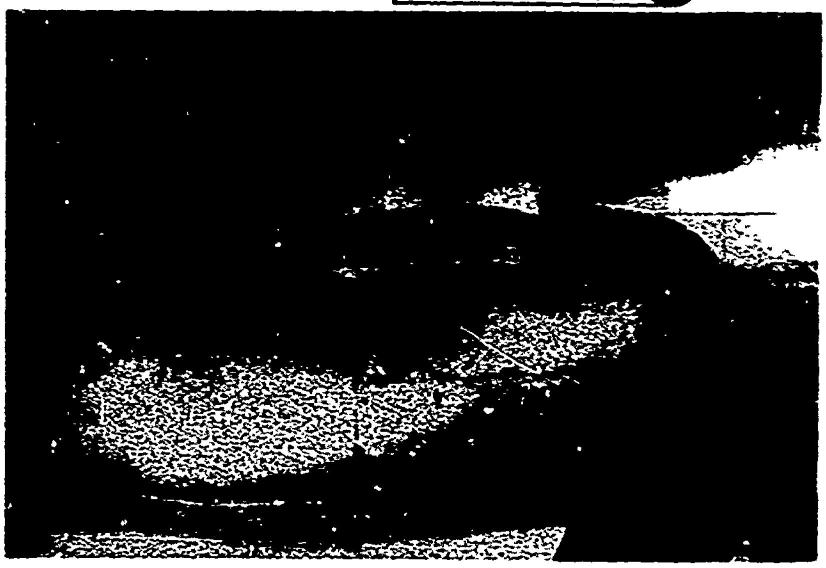


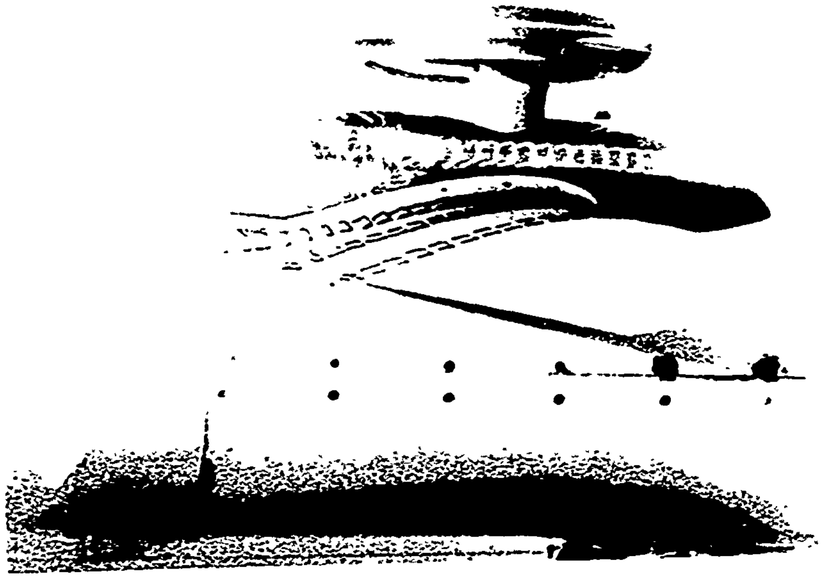
Figure 22. BLC Pump Horsepower Required for f_μ = 1.5 Square Feet Versus Flight Mach Number.

(a) Boundary Layer Control Inoperative, $f_\mu = 0\ ft^2$

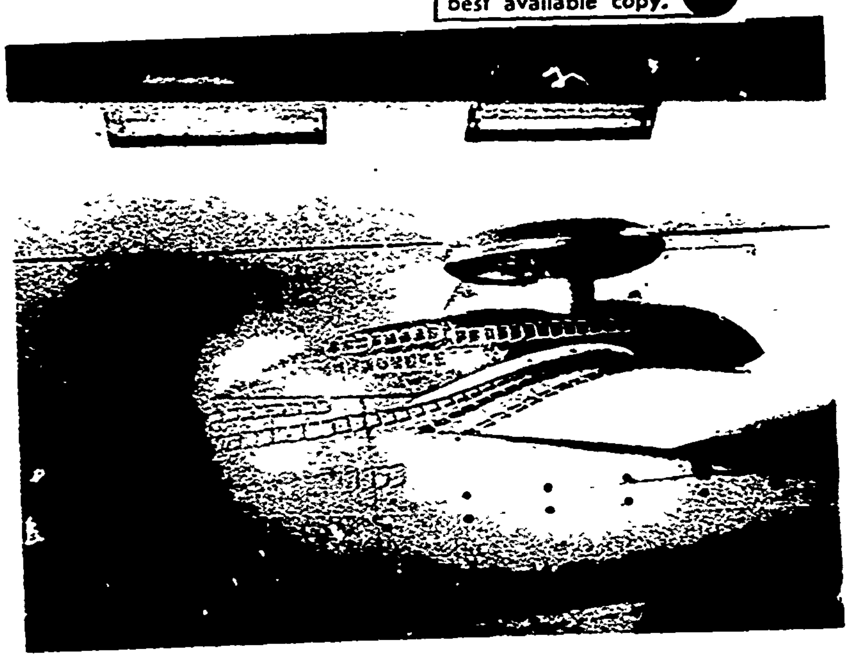


(b) Boundary Layer Control Operating, $f_\mu = 5.6\ ft^2$.

Figure 23. Tuft Photographs. Configuration FP_2BLCF_f, $M = 0.2$, $\alpha = 0$ at Various f_μ.

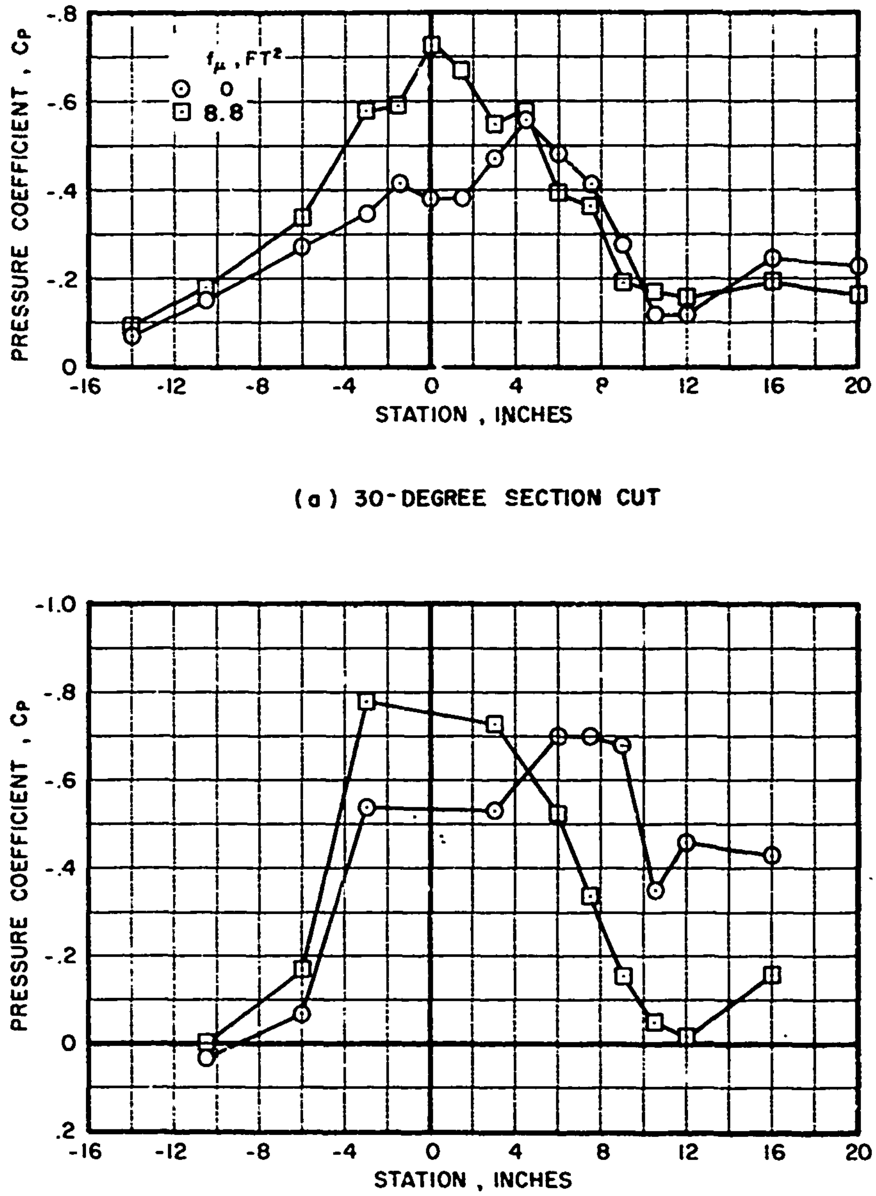


(a) Boundary Layer Control Inoperative, $f_\mu = 0\ ft^2$



(b) Boundary Layer Control Operating, $f_\mu = 5.1\ ft^2$

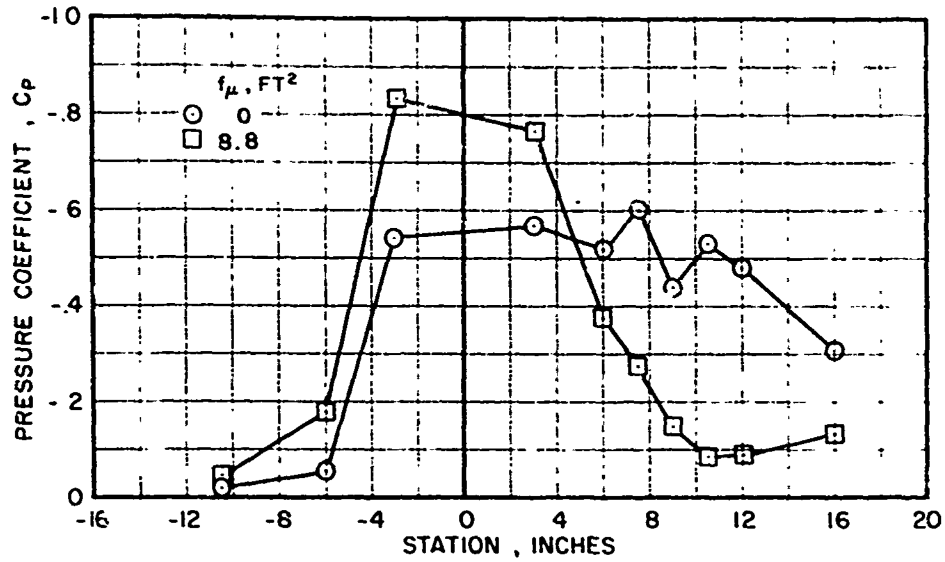
Figure 24. Tuft Photographs. Configuration FWF_2BLCF_f, $M = 0.2$, $\alpha = 0.9$ Deg at Various f_μ.



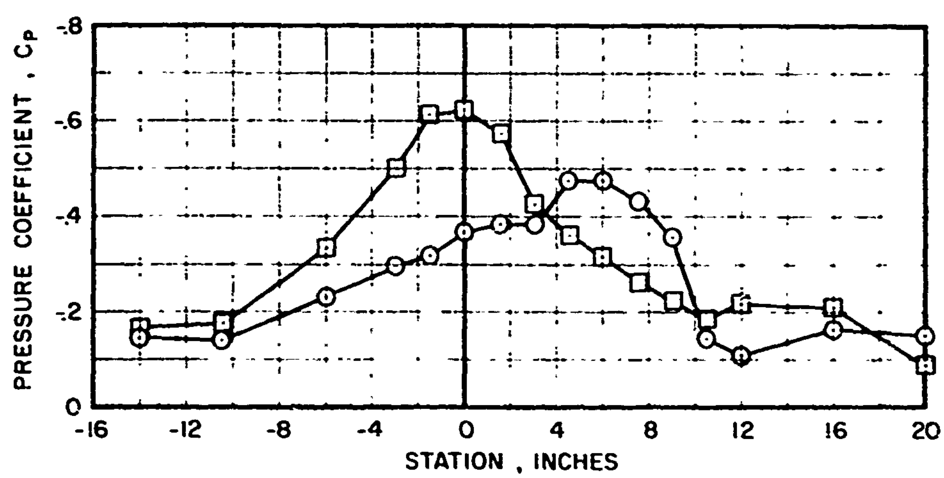
(a) 30-DEGREE SECTION CUT

(b) 60-DEGREE SECTION CUT

Figure 25. Effect of Boundary Layer Control on the Pylon Pressure Distribution, $M = 0.4$, $\alpha = 0$ Deg, Configuration FP_2BLCF_f.

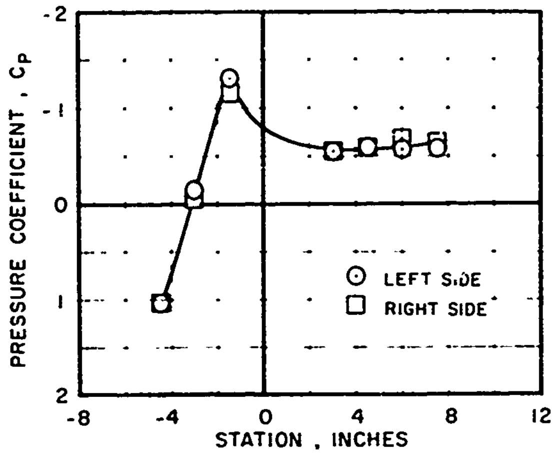


(c) 120-DEGREE SECTION CUT

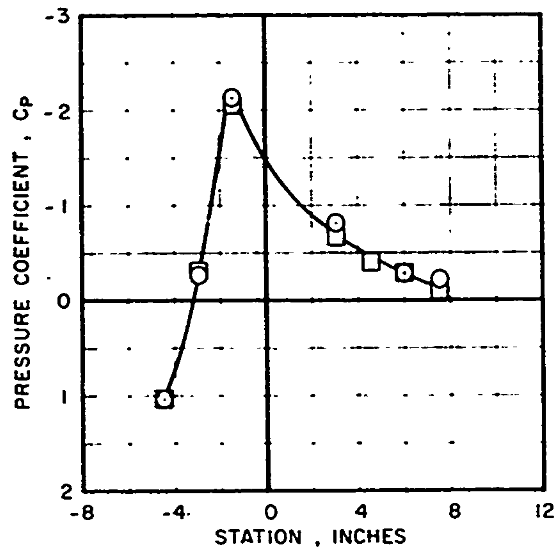


(d) 150-DEGREE SECTION CUT

Figure 25. Concluded.

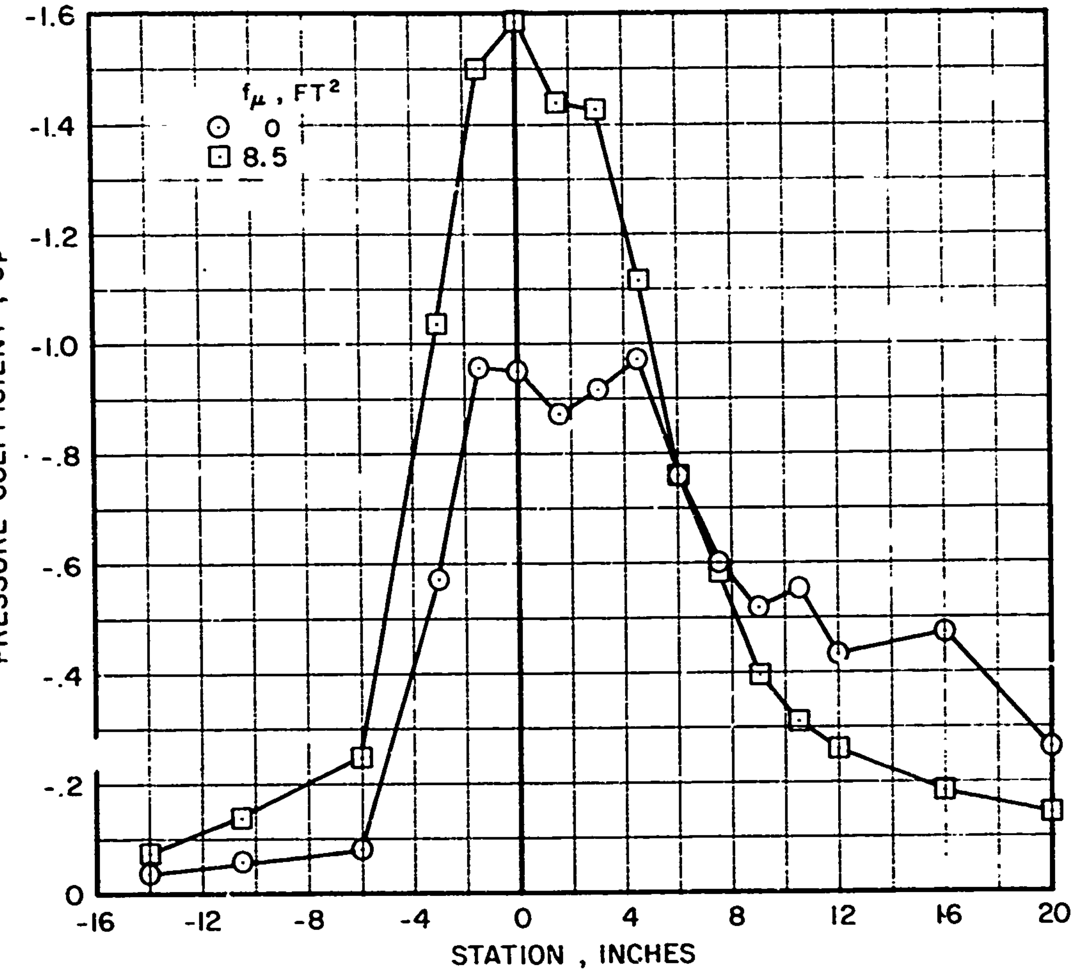


(a) f_μ = 0 FT^2



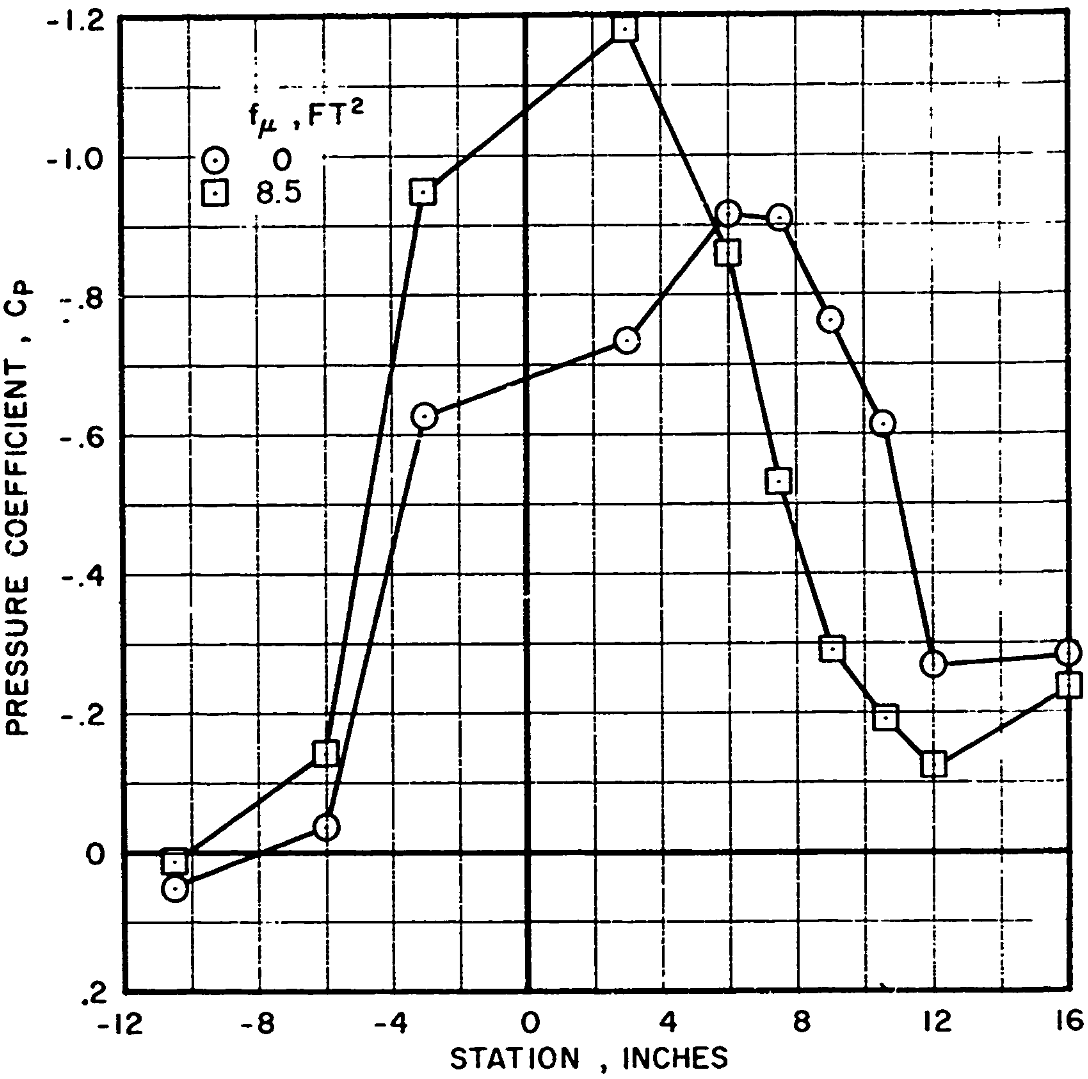
(b) f_μ = 8.8 FT^2

Figure 26. Effect of Boundary Layer Control on the BLC Cylinder - Afterbody Pressure Distribution, M = 0.4, α = 0 Deg, Configuration FP$_2$BLCF$_r$.



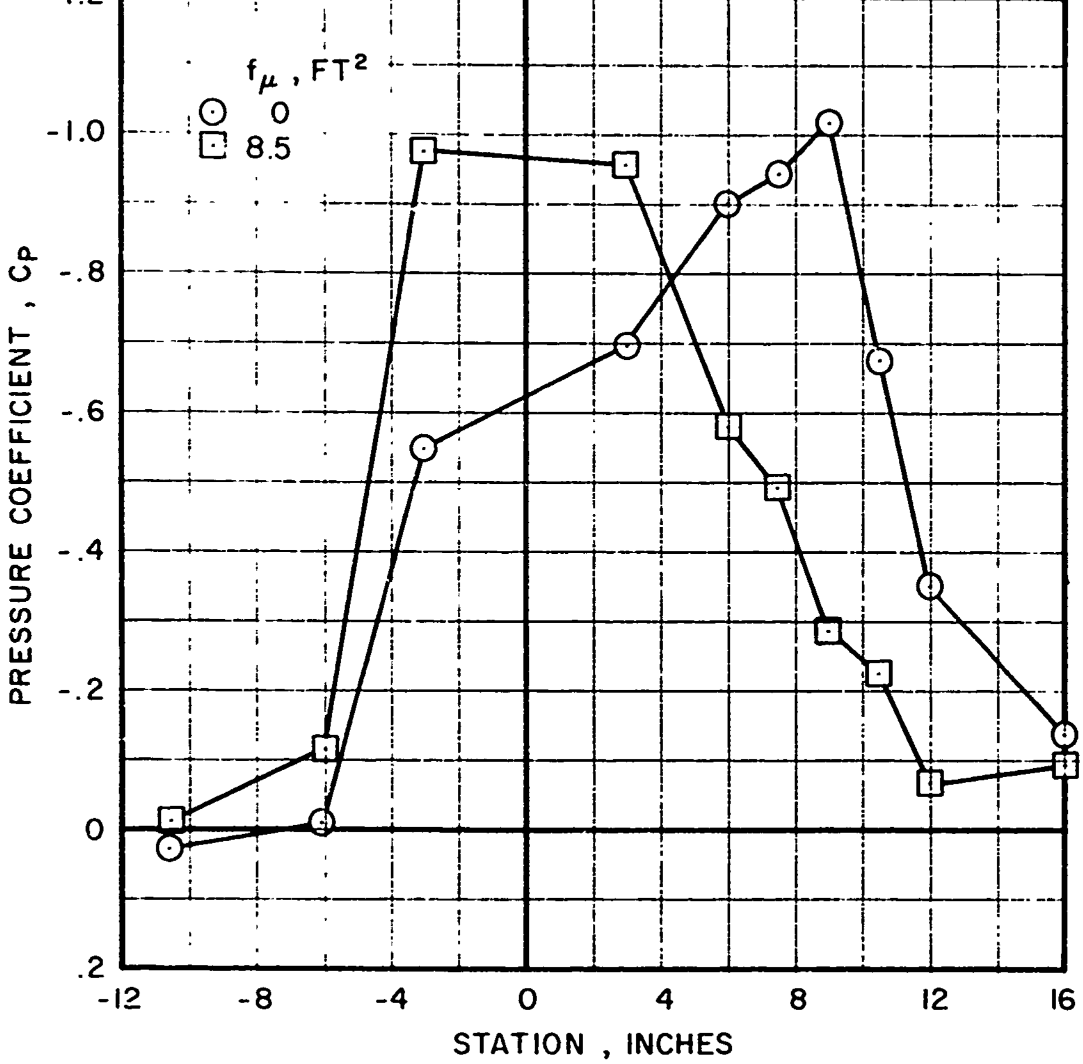
(a) 30-DEGREE SECTION CUT

Figure 27. Effect of Boundary Layer Control on the Pylon Pressure Distribution, $M = 0.4$, $\alpha = 0.9$ Deg, Configuration FWP_2BLCF_f.



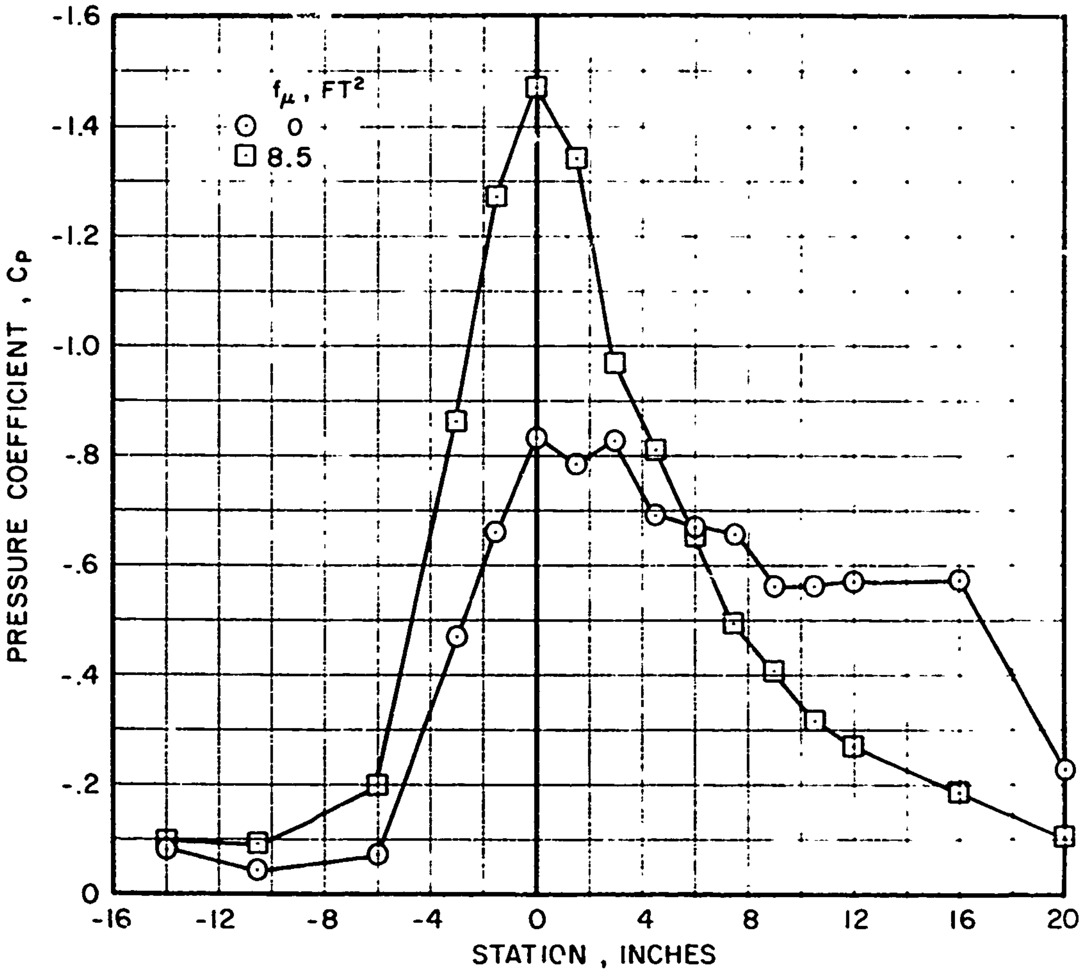
(b) 60-DEGREE SECTION CUT

Figure 27. Continued.



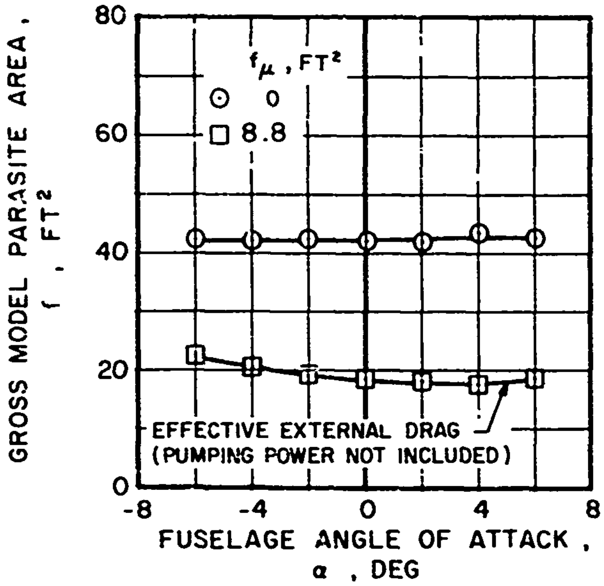
(c) 120-DEGREE SECTION CUT

Figure 27. Continued.

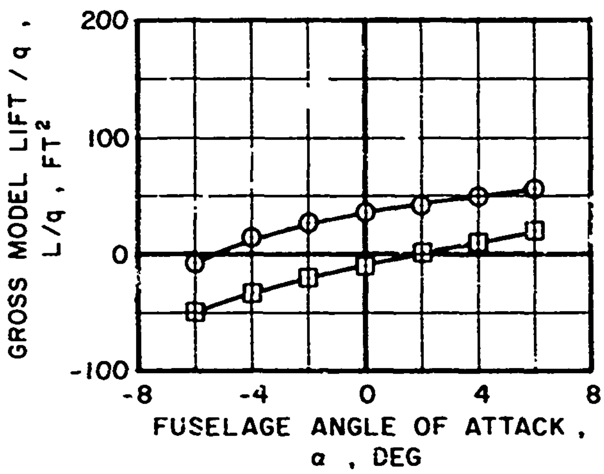


(d) 150 - DEGREE SECTION CUT

Figure 27. Concluded.

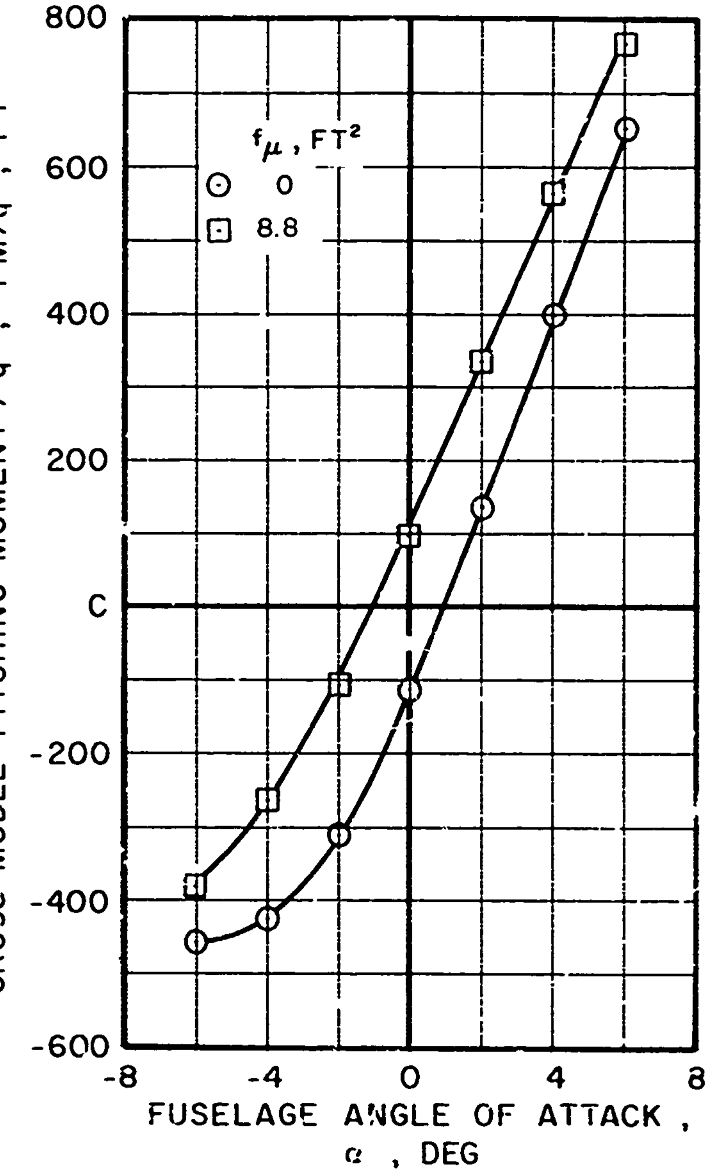


(a) DRAG



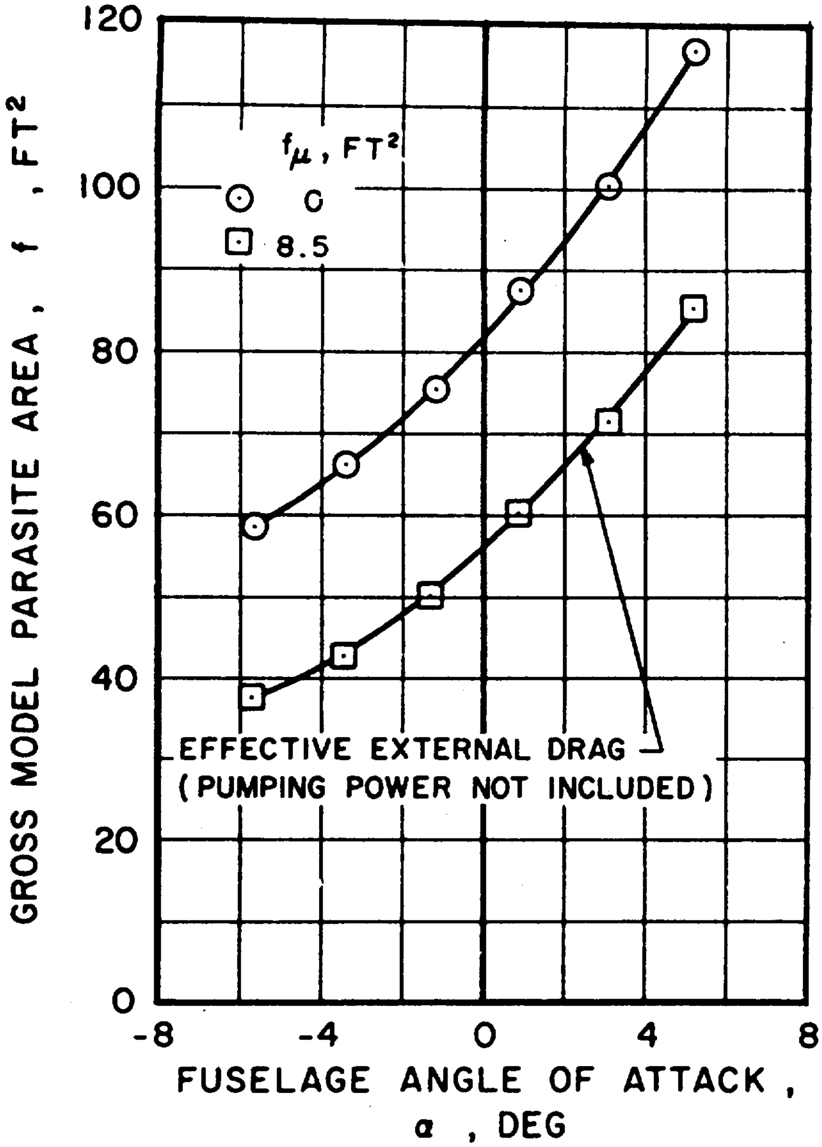
(b) LIFT

Figure 28. The Effect of Boundary Layer Control Shutdown on Aircraft Performance and Trim Without Wing, Configuration FP_2BLCF_f, M = 0.4.



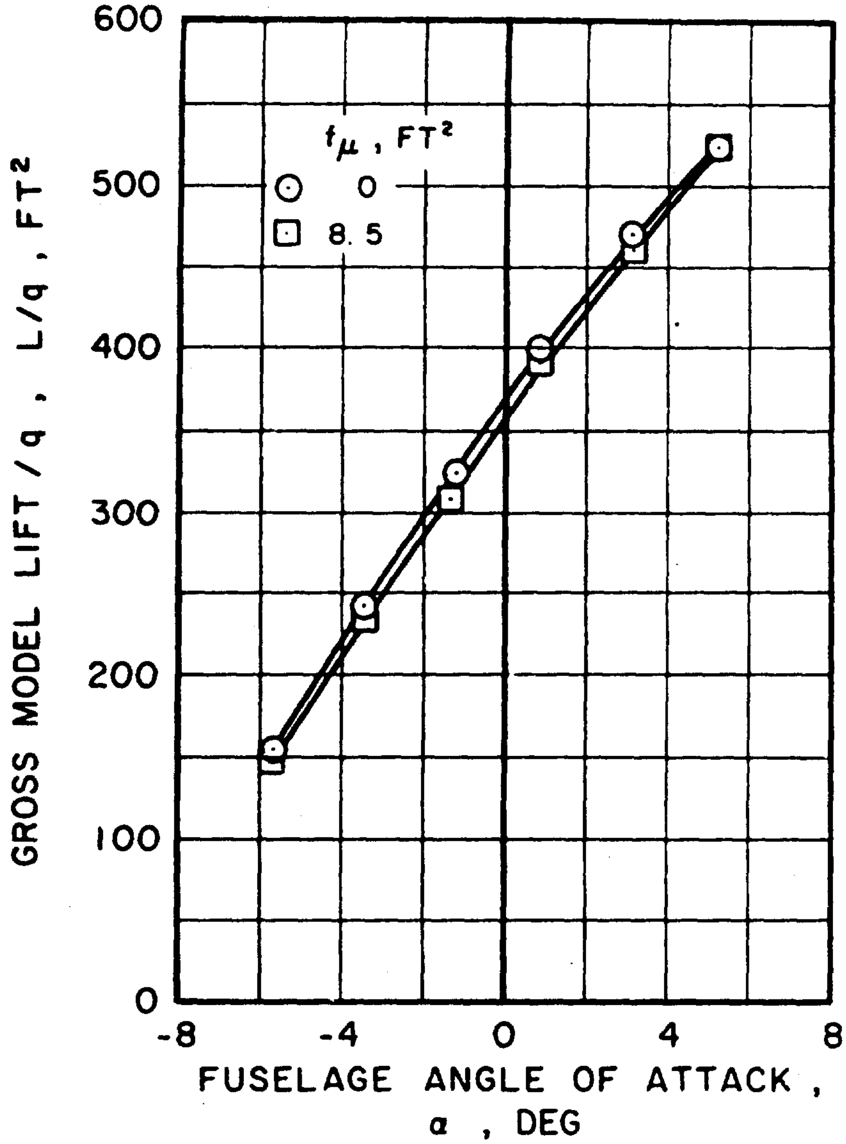
(c) PITCHING MOMENT

Figure 28. Concluded.



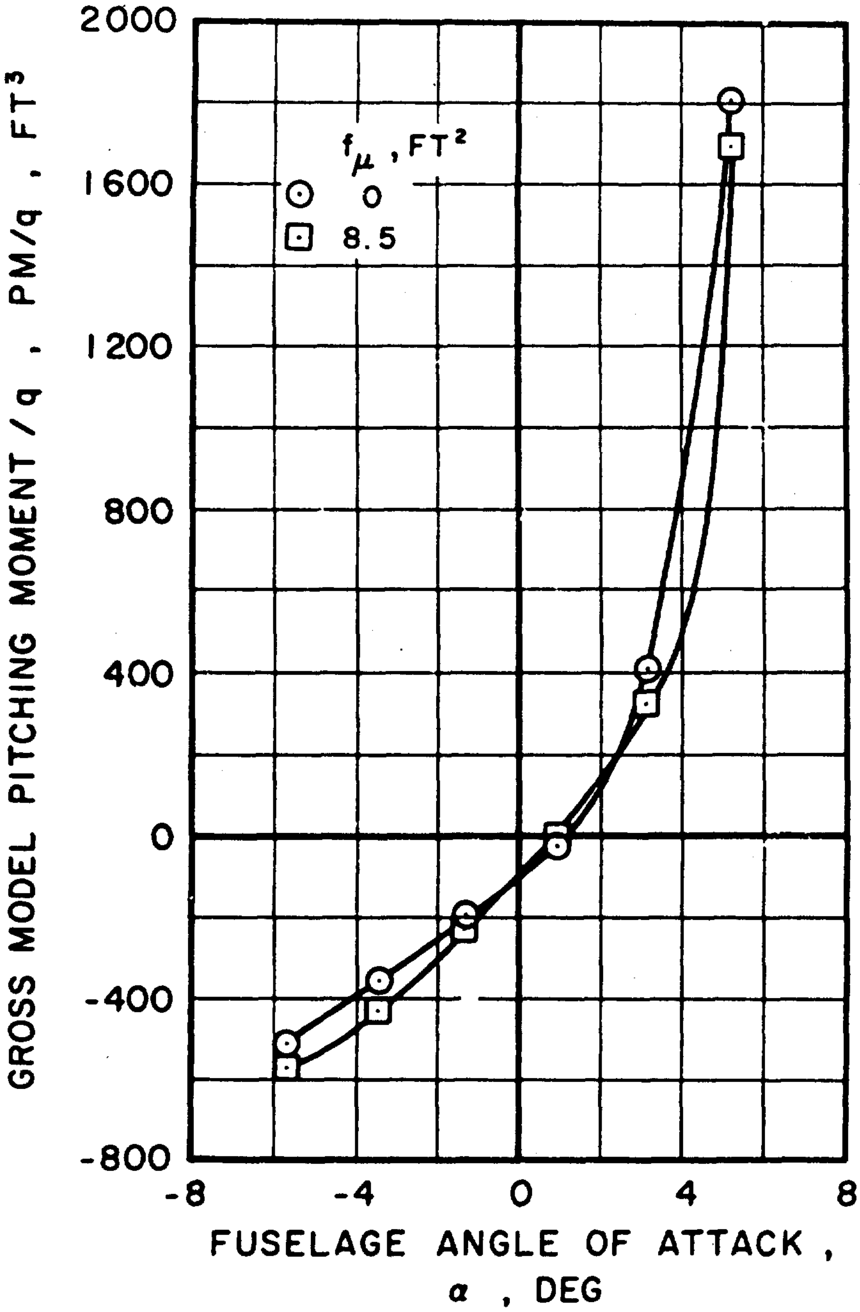
(a) DRAG

Figure 29. The Effect of Boundary Layer Control Shutdown on Aircraft Performance and Trim with Wing, Configuration FWP_2BLCF_f, M = 0.4.



(b) LIFT

Figure 29. Continued.



(c) PITCHING MOMENT

Figure 29. Concluded.

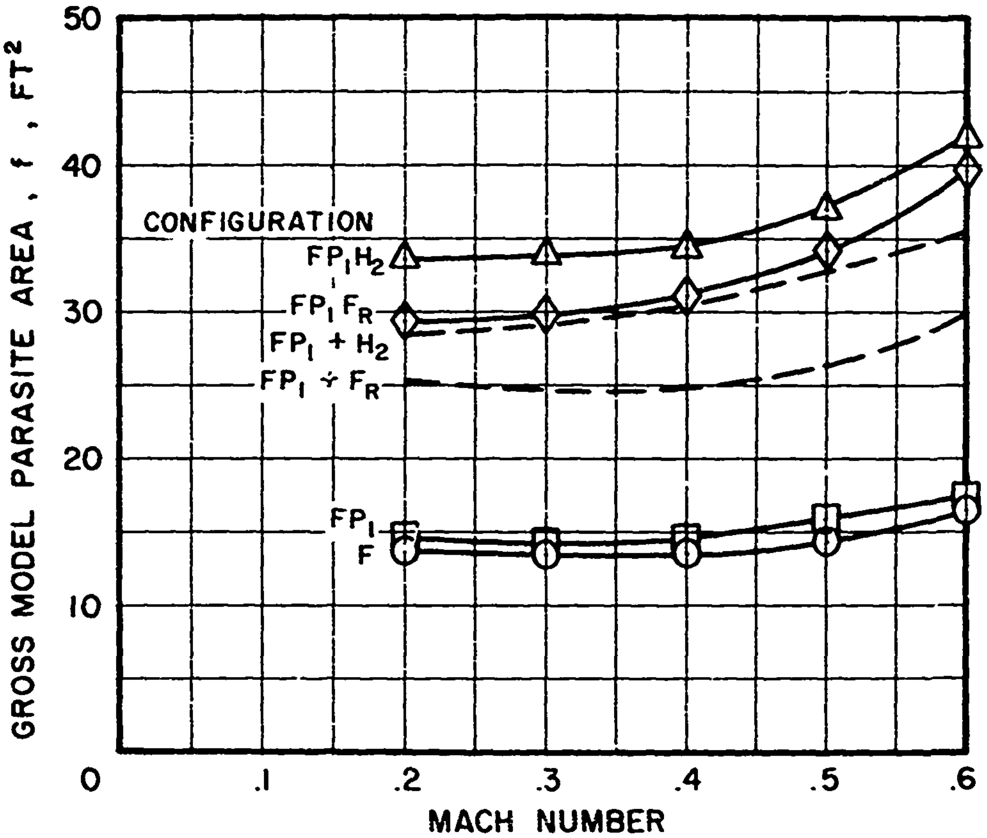


Figure 30. The Drag Characteristics of the Rigid Fairing Configurations Without Wing, α = 0 Deg.

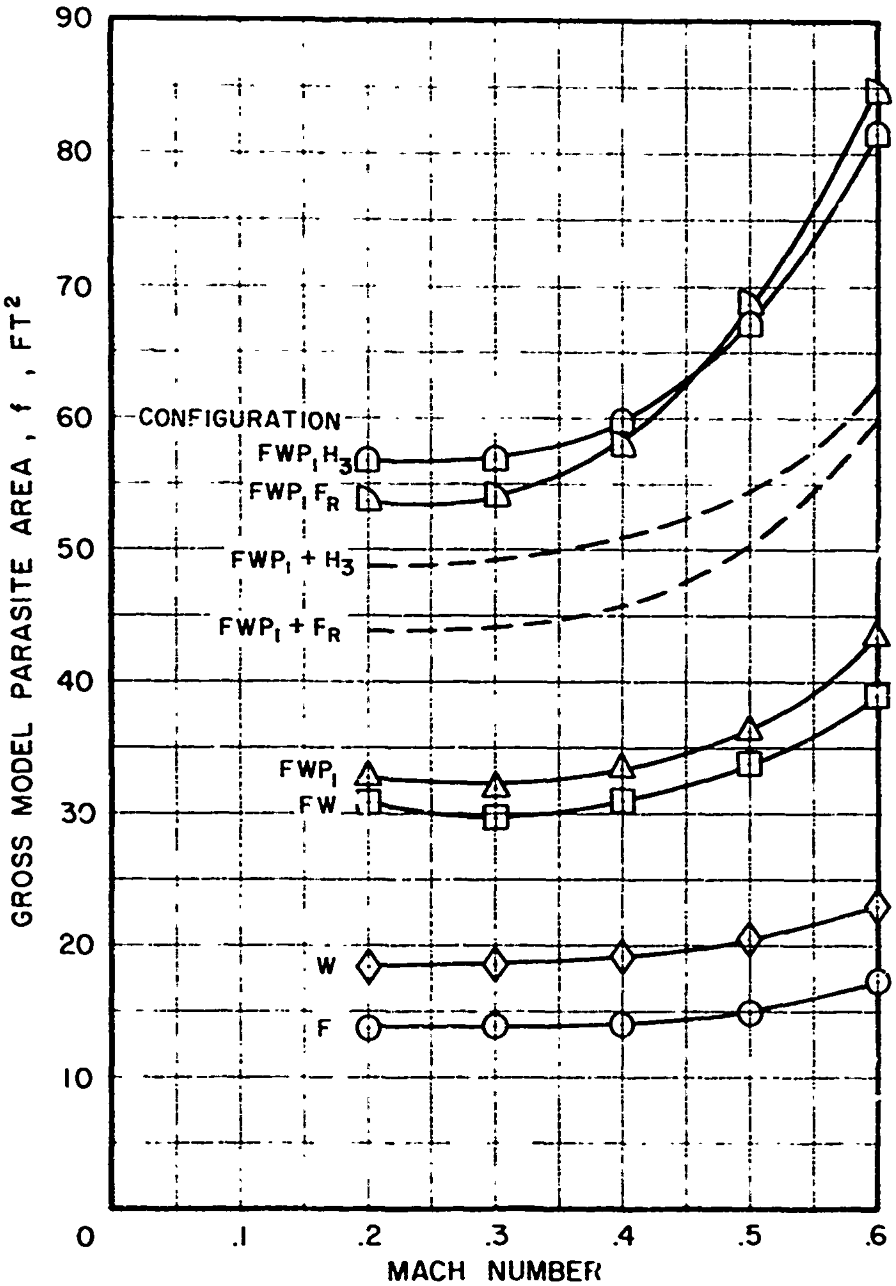


Figure 31. The Drag Characteristics of the Rigid Fairing Configurations With Wing. $\alpha = -1.4$ Deg.

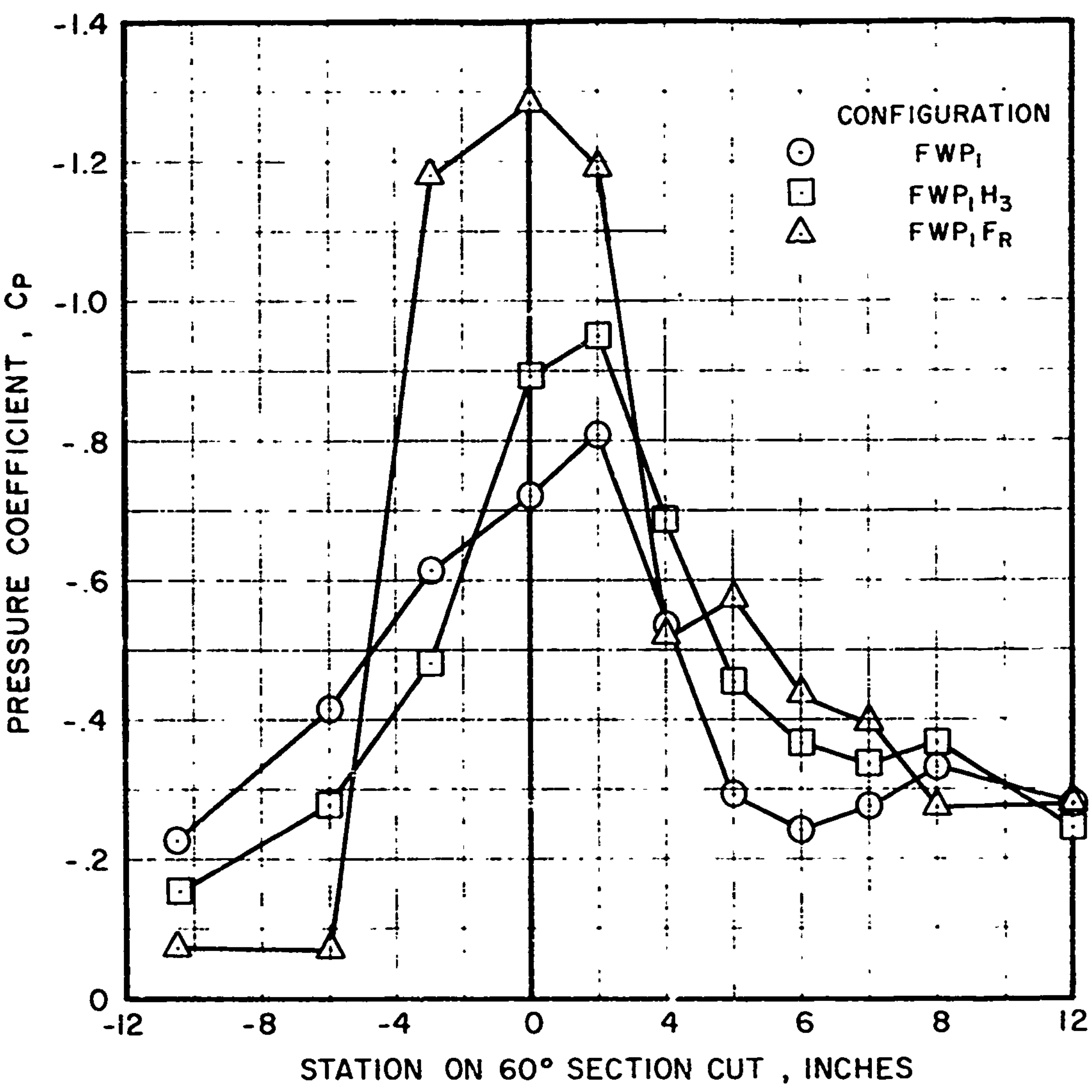
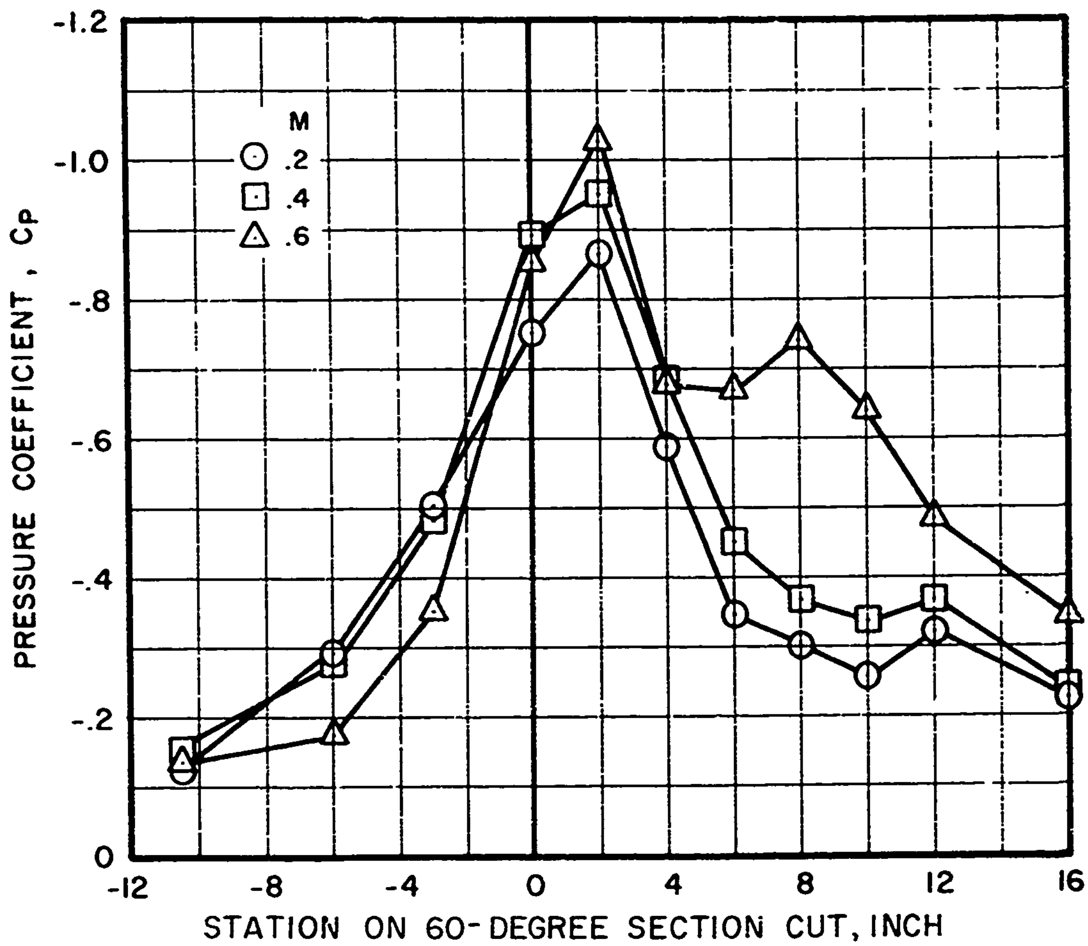
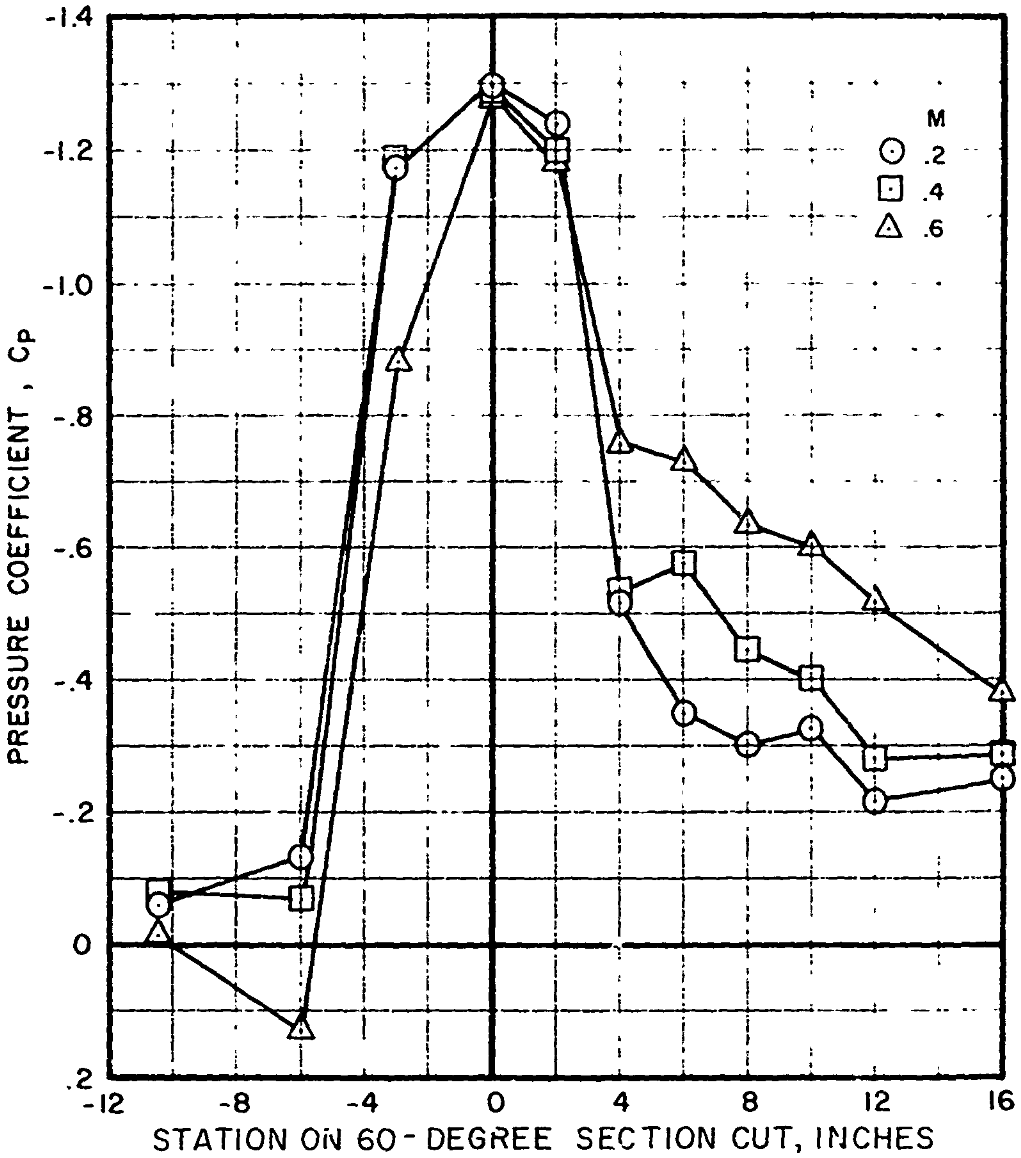


Figure 32. Comparison of Typical Pylon Pressure Distributions With Various Rotor Head Configurations With Wing, M = 0.4, α = 0.9 Deg.



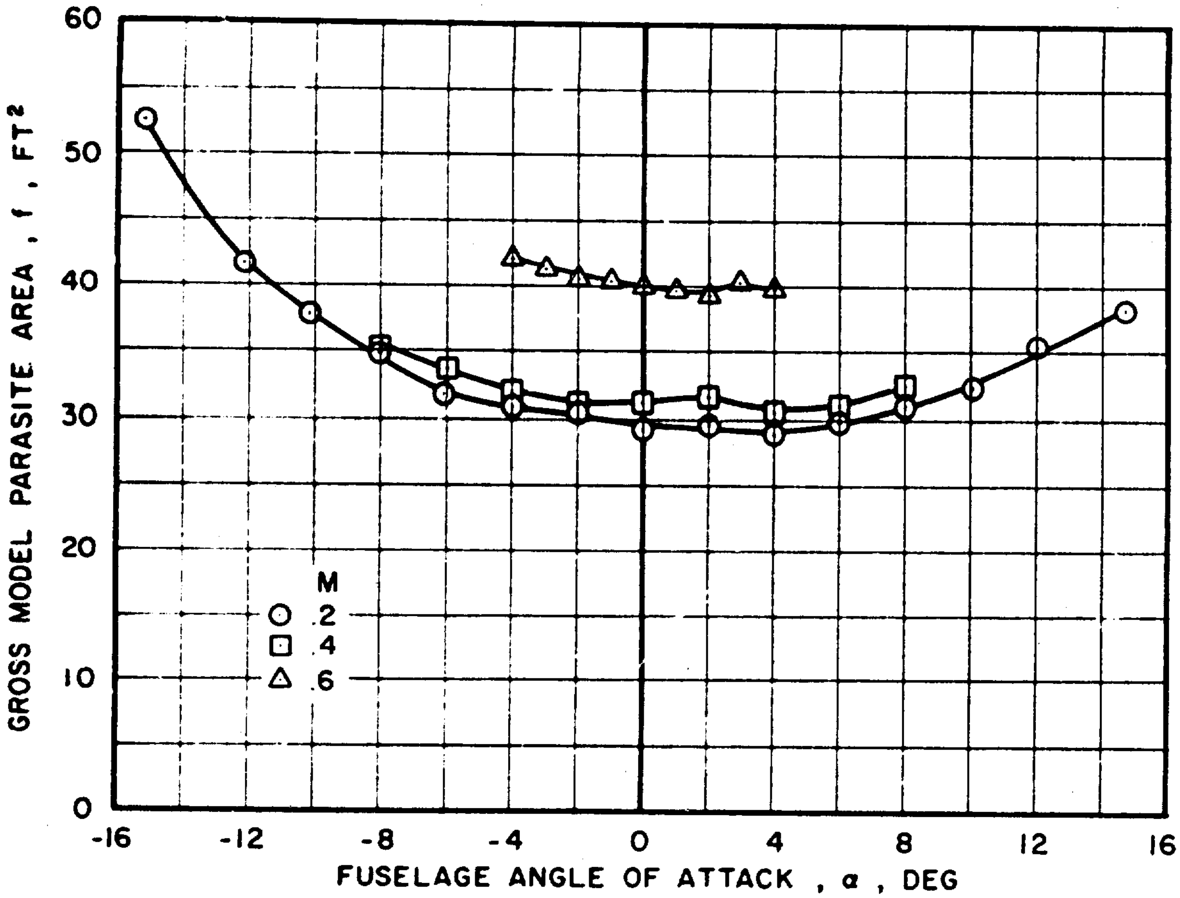
(a) CONFIGURATION $FWP_1 \cdot H_3$

Figure 33. The Variation with Mach Number of the Pressure Distribution Along the 60-Deg Section Cut for Configurations FWP_1H_3 and FWP_1F_R, $\alpha = 0.9$ Deg.



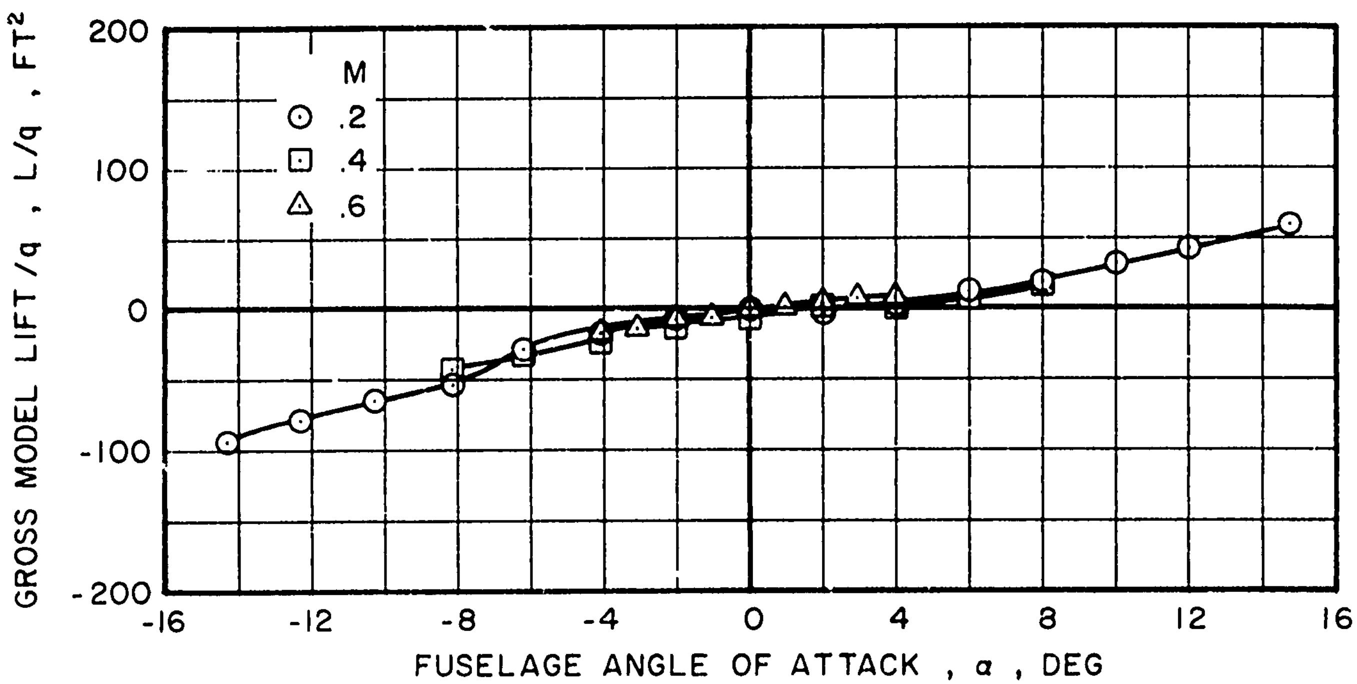
(b) CONFIGURATION FWP_iF_R

Figure 33. Concluded.



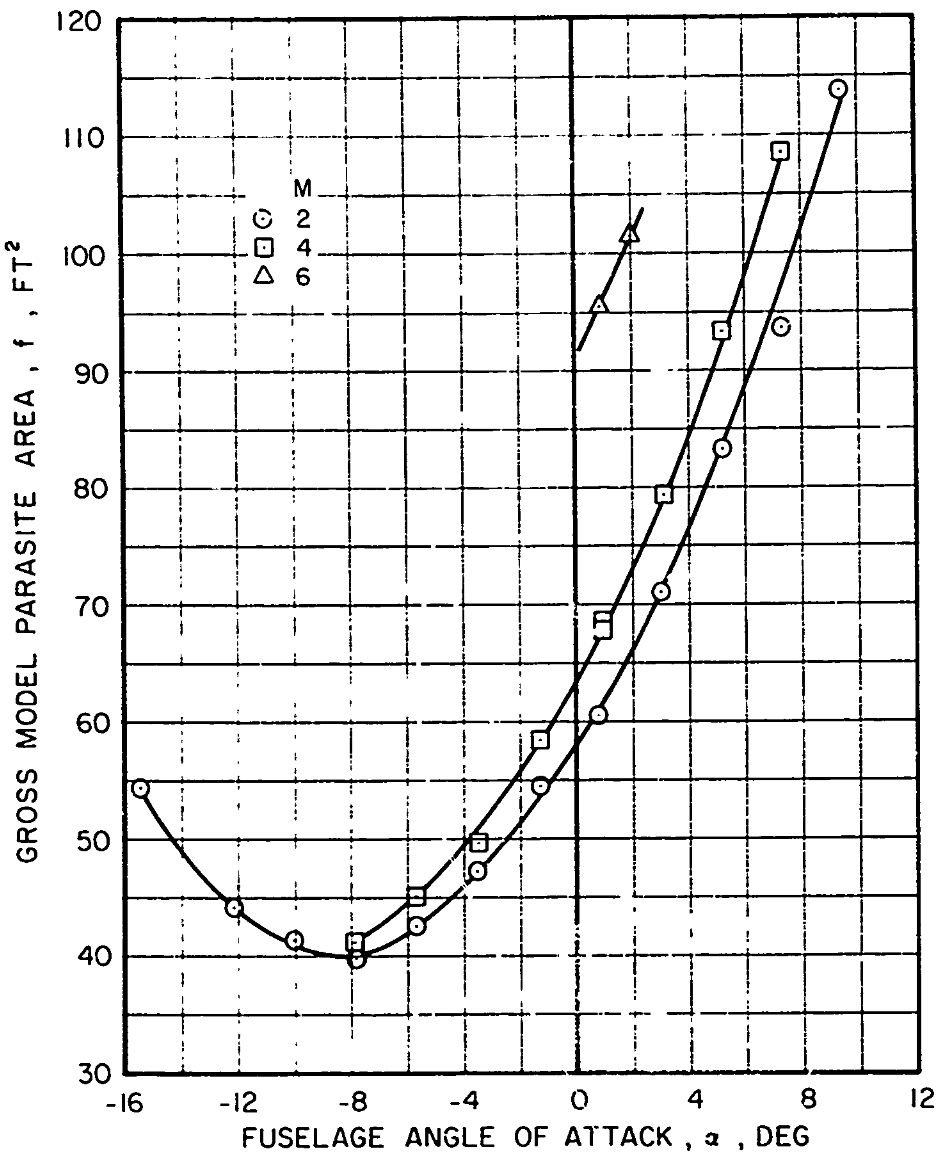
(a) DRAG

Figure 34. The Effect of Angle of Attack on the Drag and Lift of the Wingless Helicopter with Rigid Fairing, Configuration FP_1F_R.



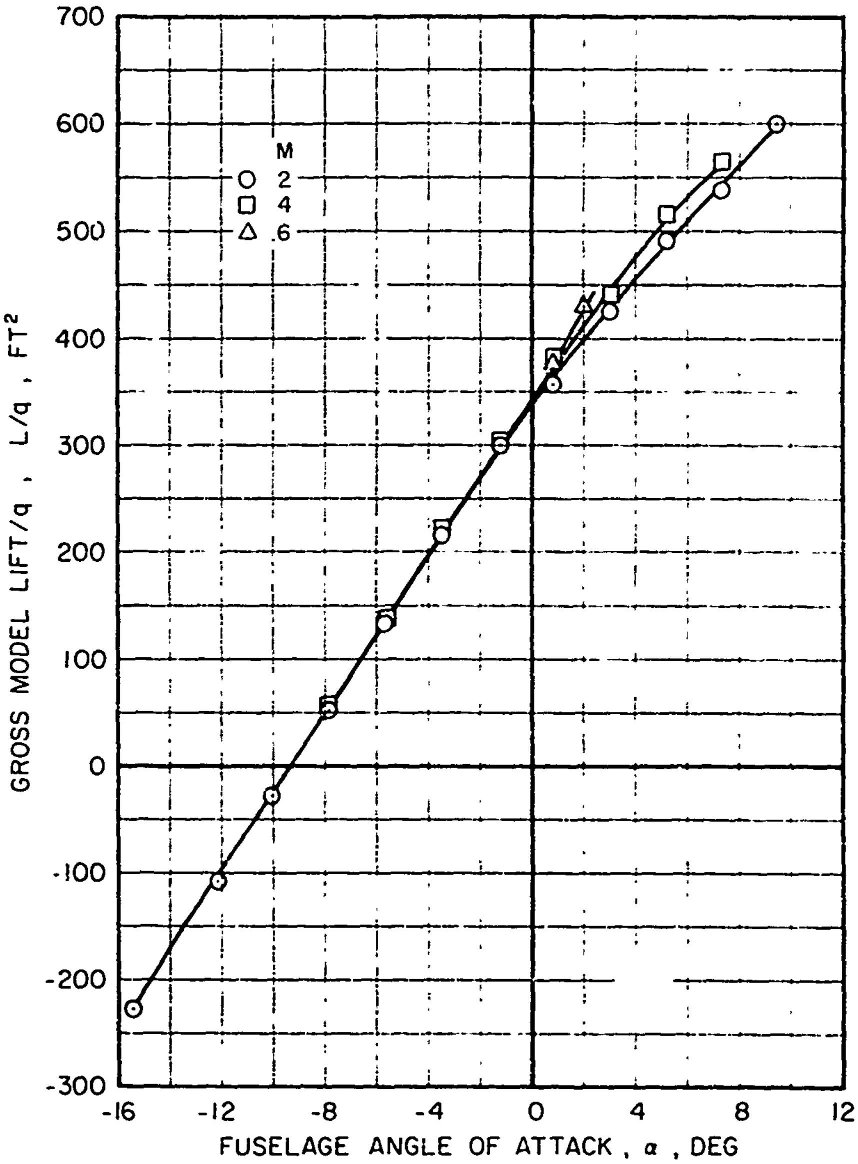
(b) LIFT

Figure 34. Concluded.



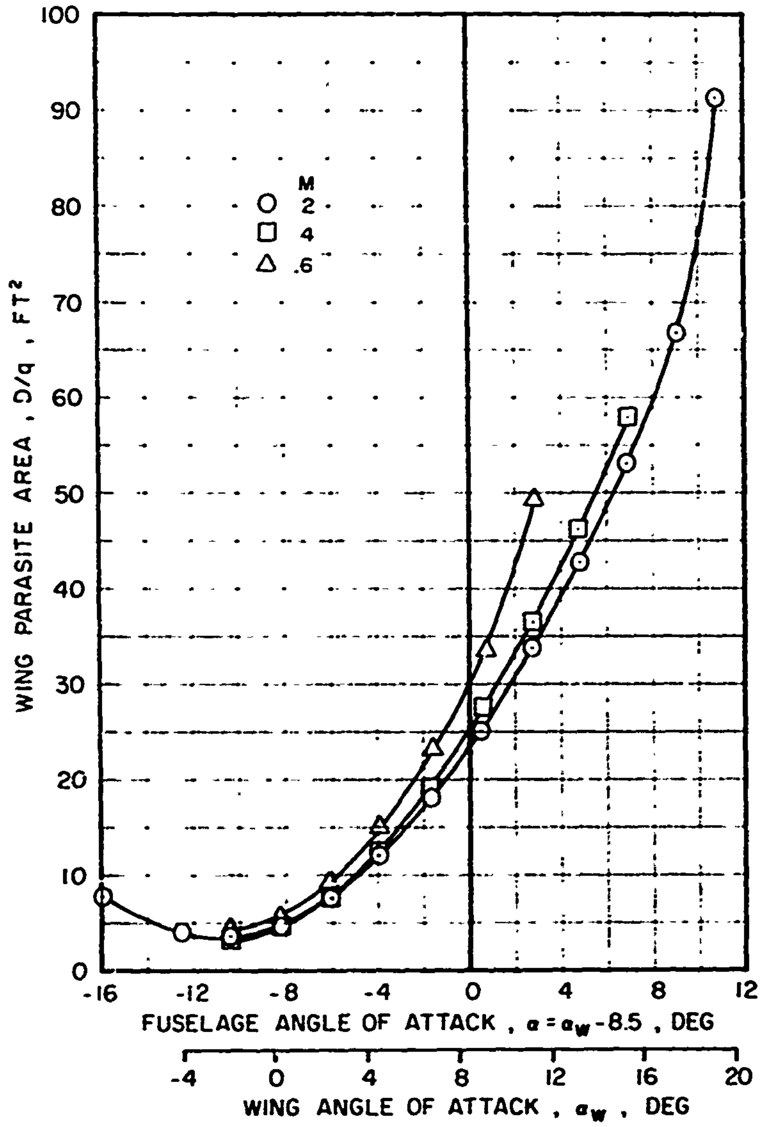
(a) DRAG

Figure 35. The Effect of Angle of Attack on the Drag and Lift of the Helicopter with Wing and Rigid Fairing, Configuration FWP_1F_R.



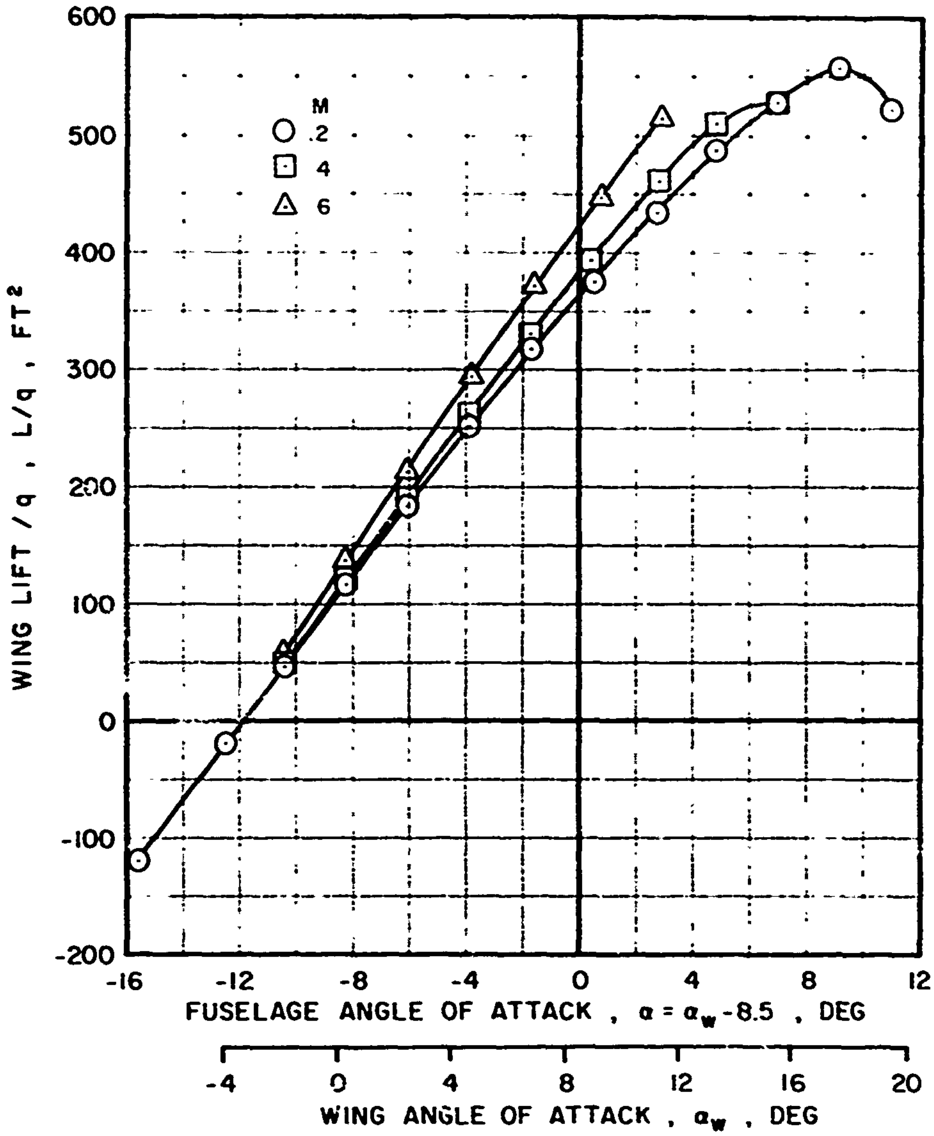
(b) LIFT

Figure 35. Concluded.



(a) DRAG

Figure 36. Wing Lift and Drag Variation With Angle of Attack at Various Mach Numbers, Configuration W.



(b) LIFT

Figure 36. Concluded.

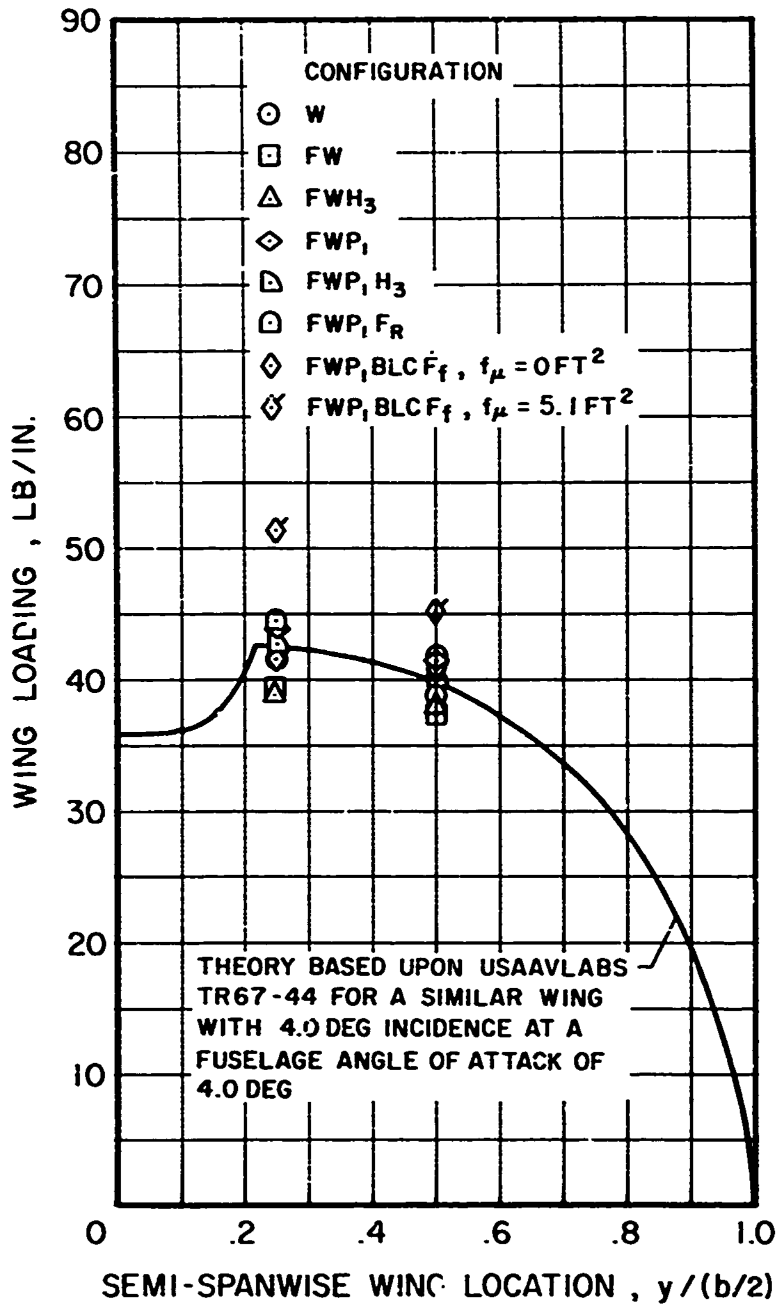


Figure 37. Wing Spanwise Loading for Compound Configuration, $M = 0.2$, $\alpha = 0.9$ Deg.

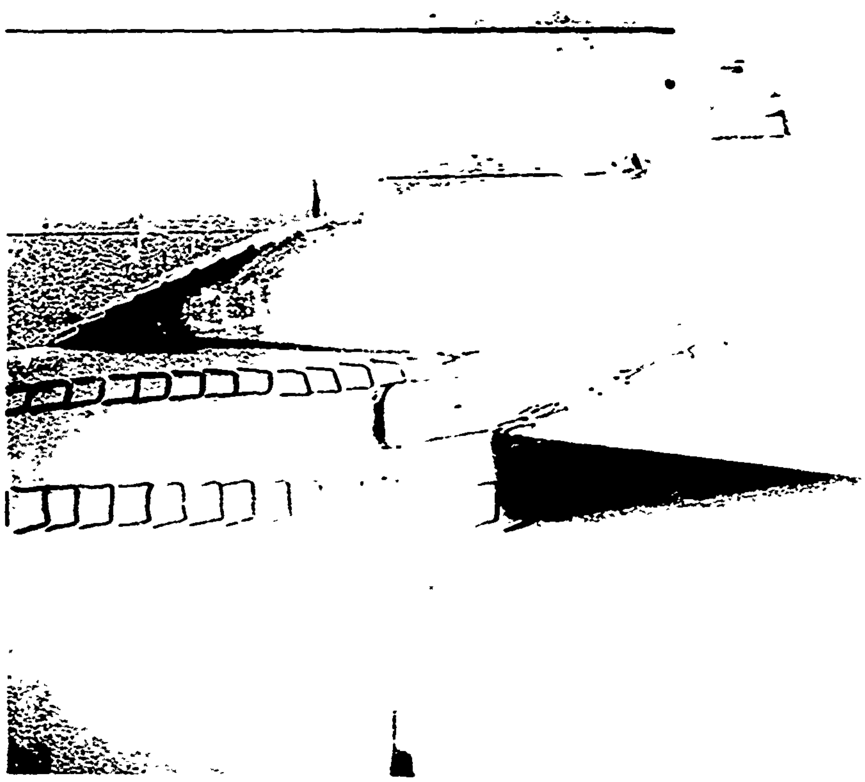
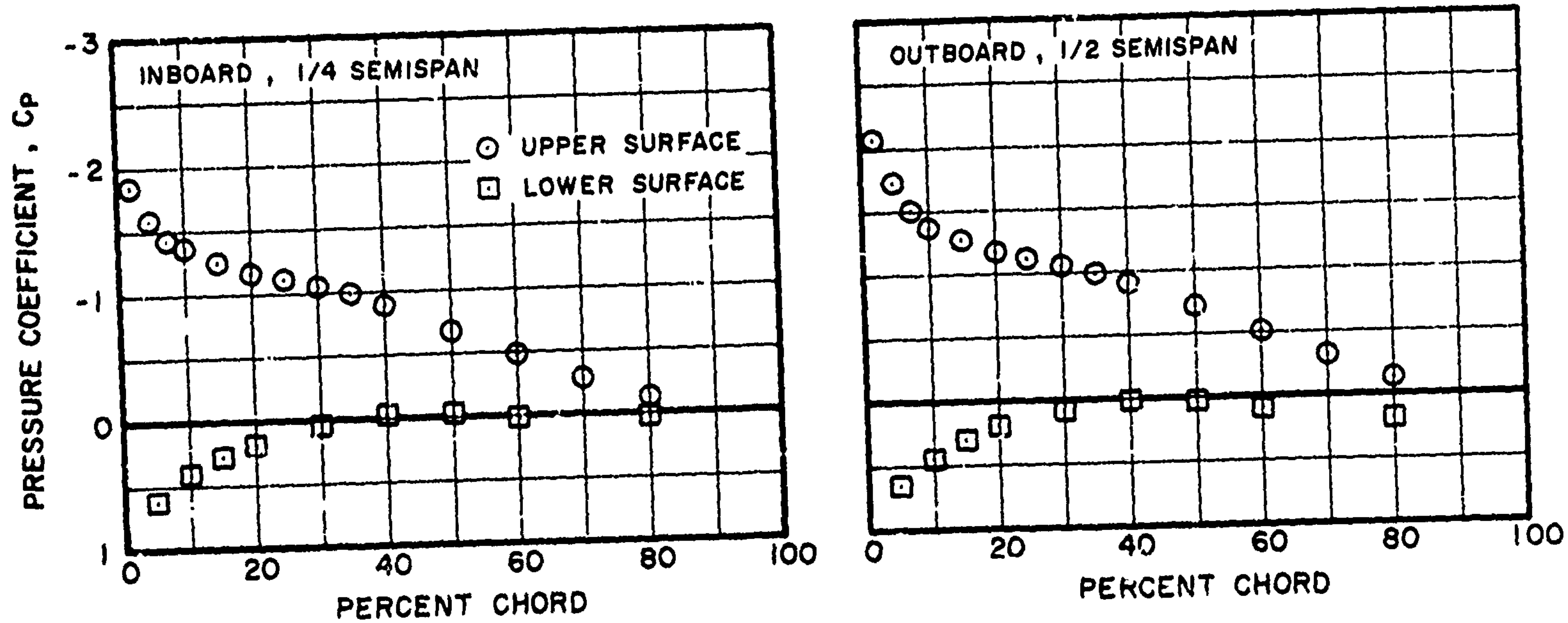
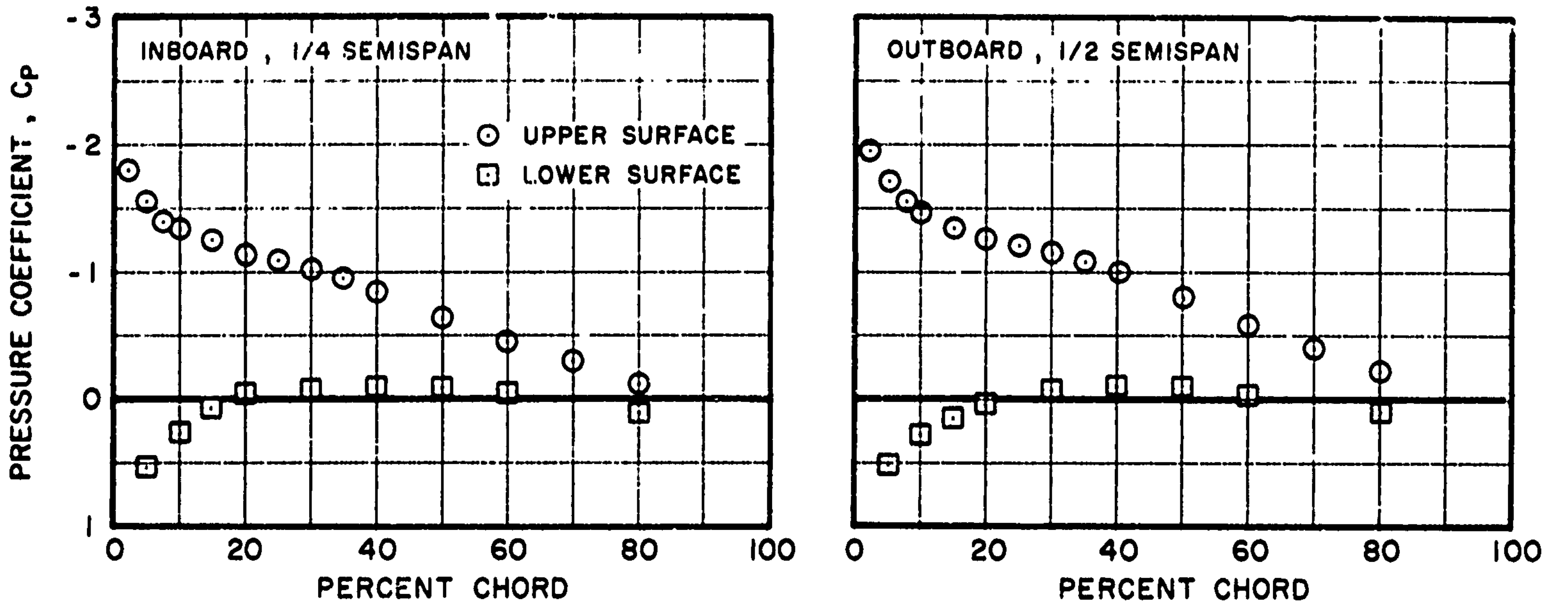


Figure 38. Tuft Photograph Showing Flow Separation at Wing Root, Configuration FWP_1H_3, M = 0.2, α = 0.9 Deg.



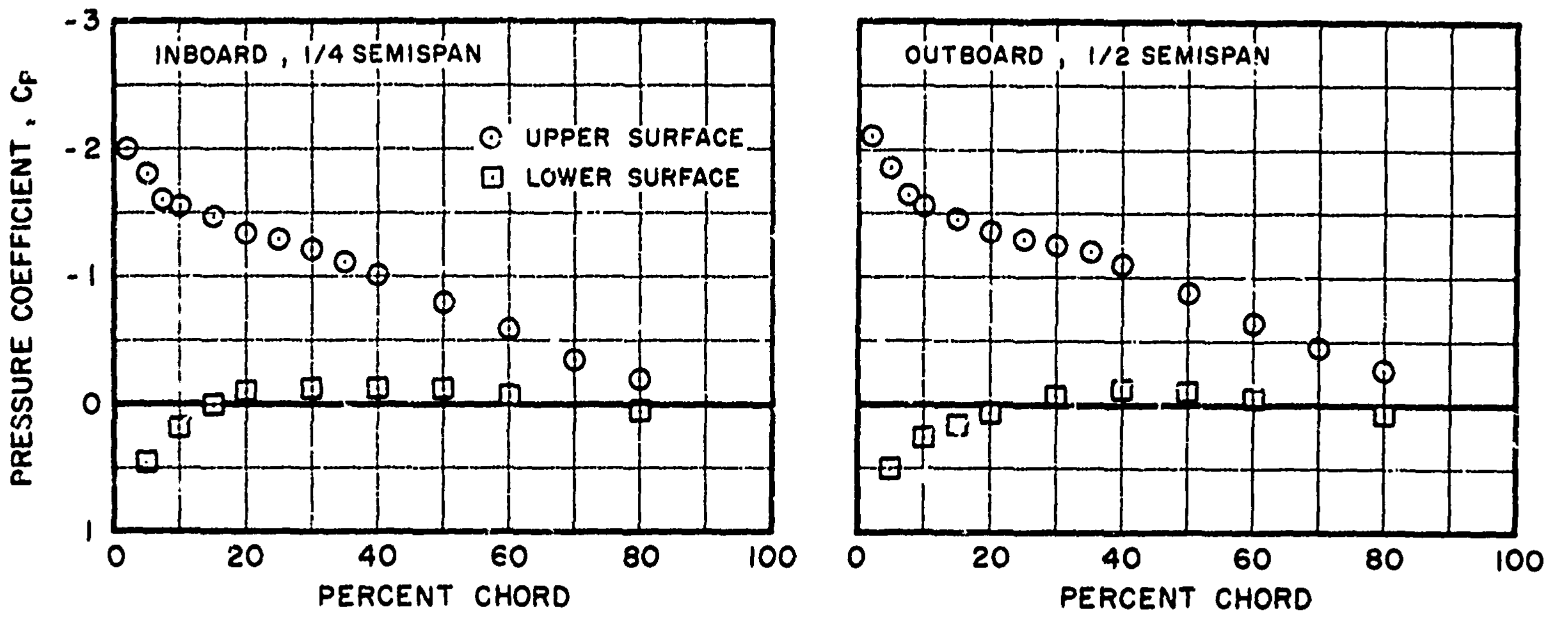
(a) WING ALONE, W

Figure 39. Wing Chordwise Pressure Variation for Six Configurations with Wing, $M = 0.4$, $\alpha = 0.9$ Deg.



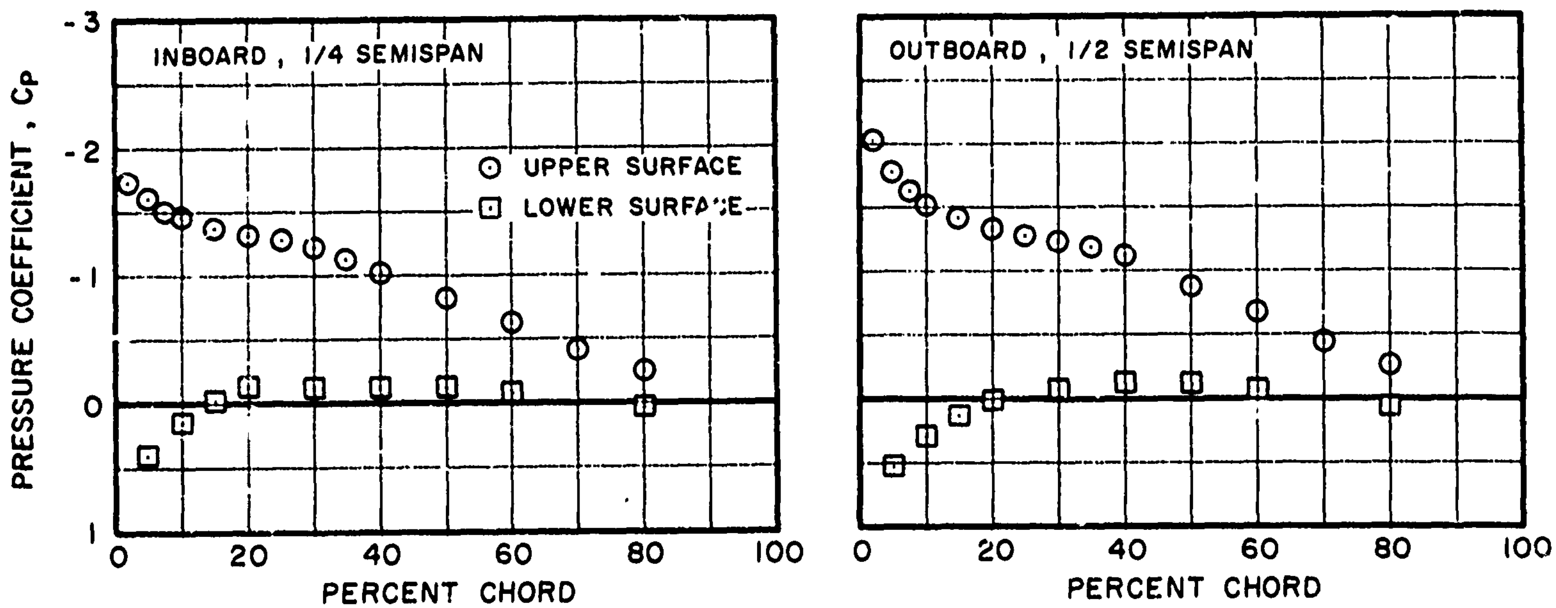
(b) FUSELAGE AND WING , FW

Figure 39. Continued.



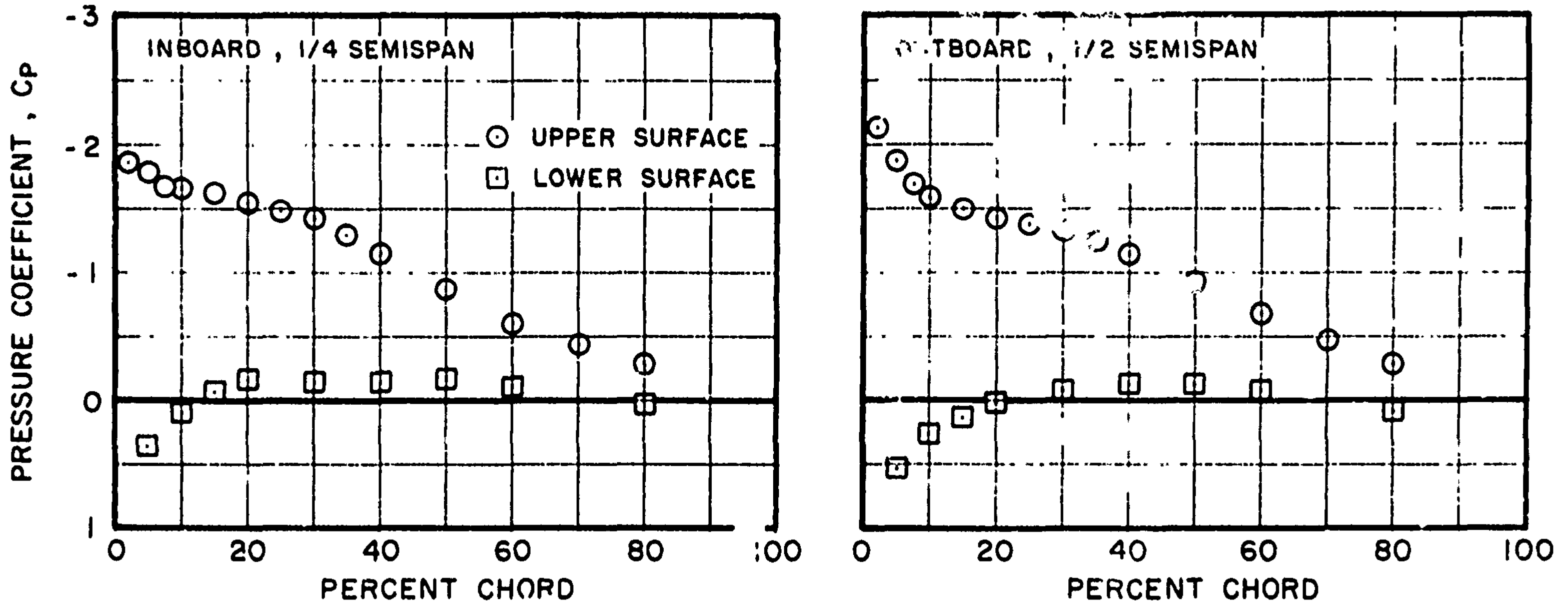
(c) FUSELAGE AND WING WITH RIGID FAIRING PYLON , FWP_1

Figure 39. Continued.



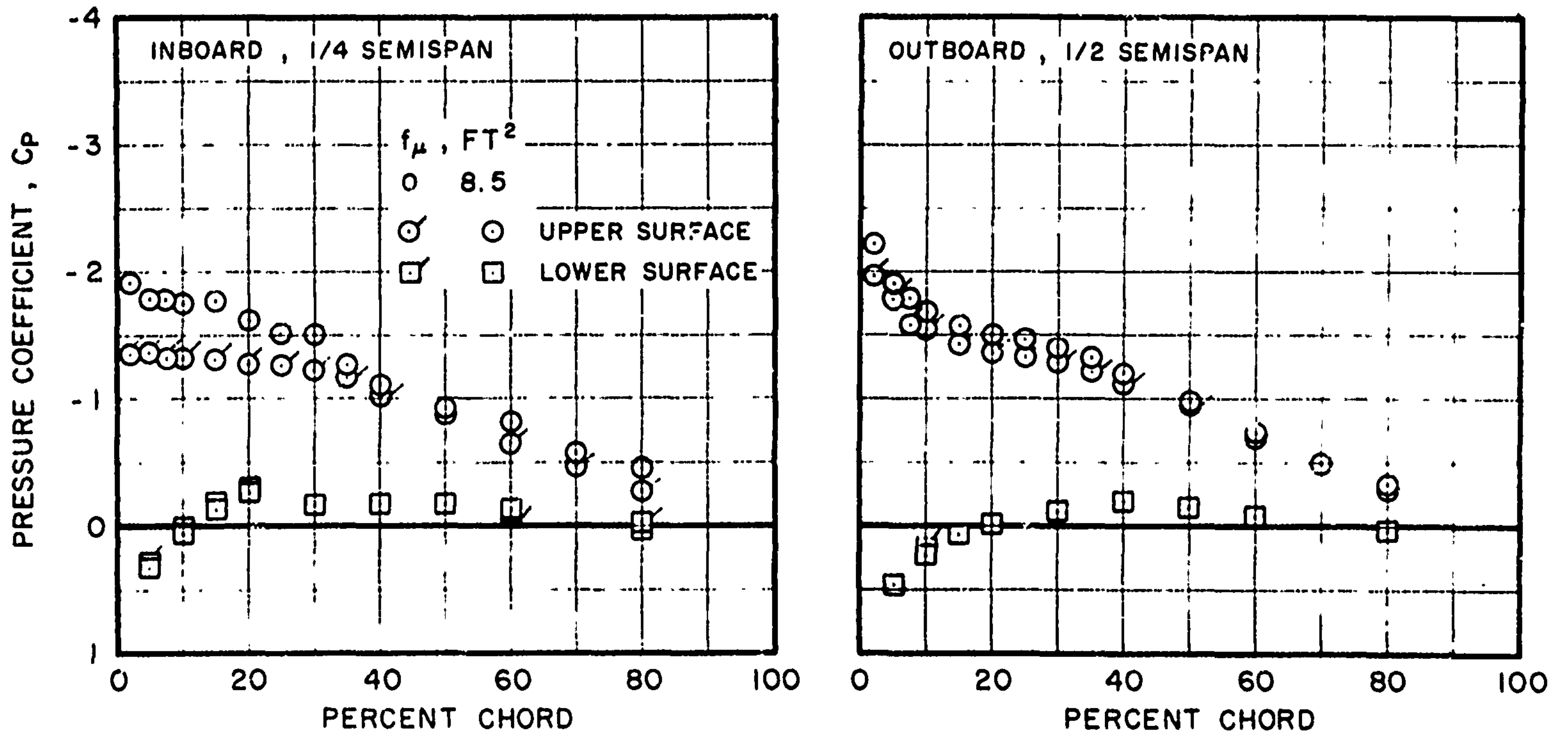
(d) FUSELAGE AND WING WITH RIGID FAIRING PYLON AND UNFAIRED ROTOR HEAD , FWP_1H_3

Figure 39. Continued.



(e) RIGID FAIRING CONFIGURATION WITH WING , FWP_1F_R

Figure 39. Continued.



(f) FLOATING FAIRING CONFIGURATION WITH WING , $FWP_2 BLC F_f$

Figure 39. Concluded.

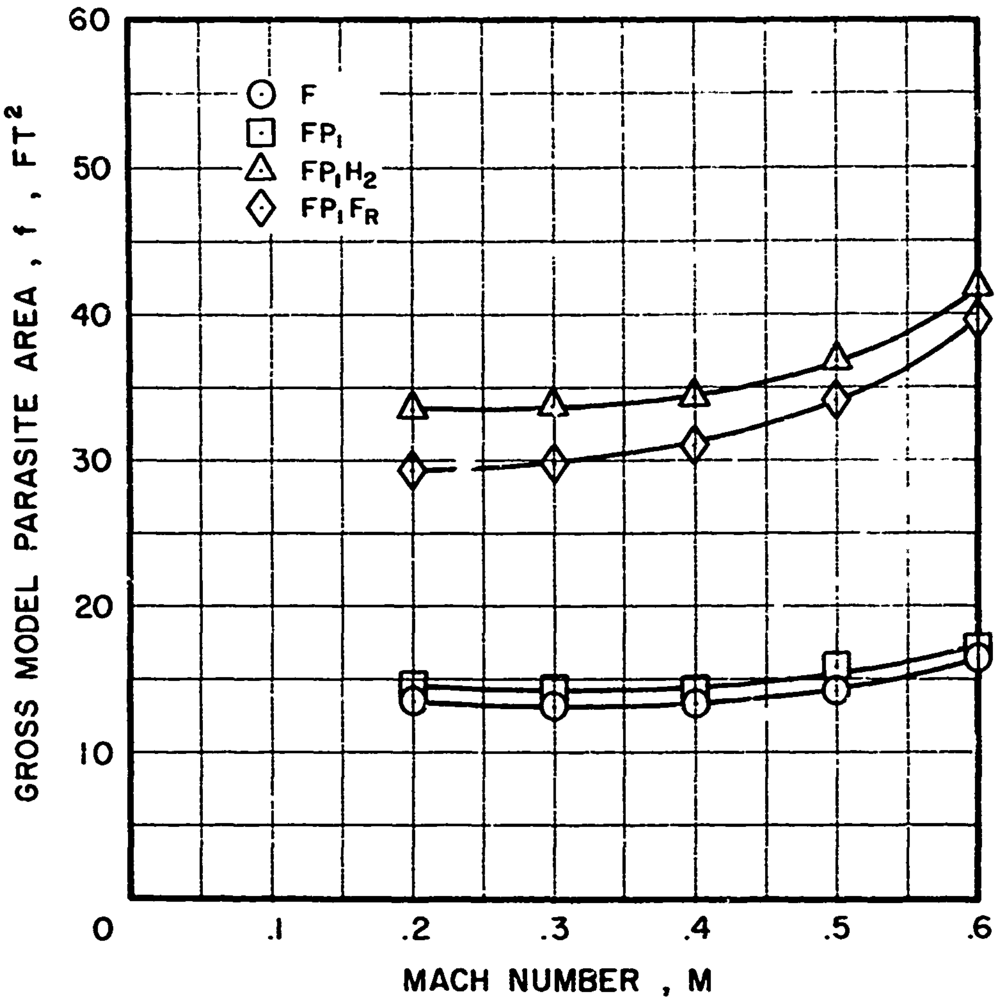


Figure 40. The Effect of Mach Number on the Drag of Several Wingless Helicopter Configurations Associated with the Rigid Fairing at α = 0 Deg.

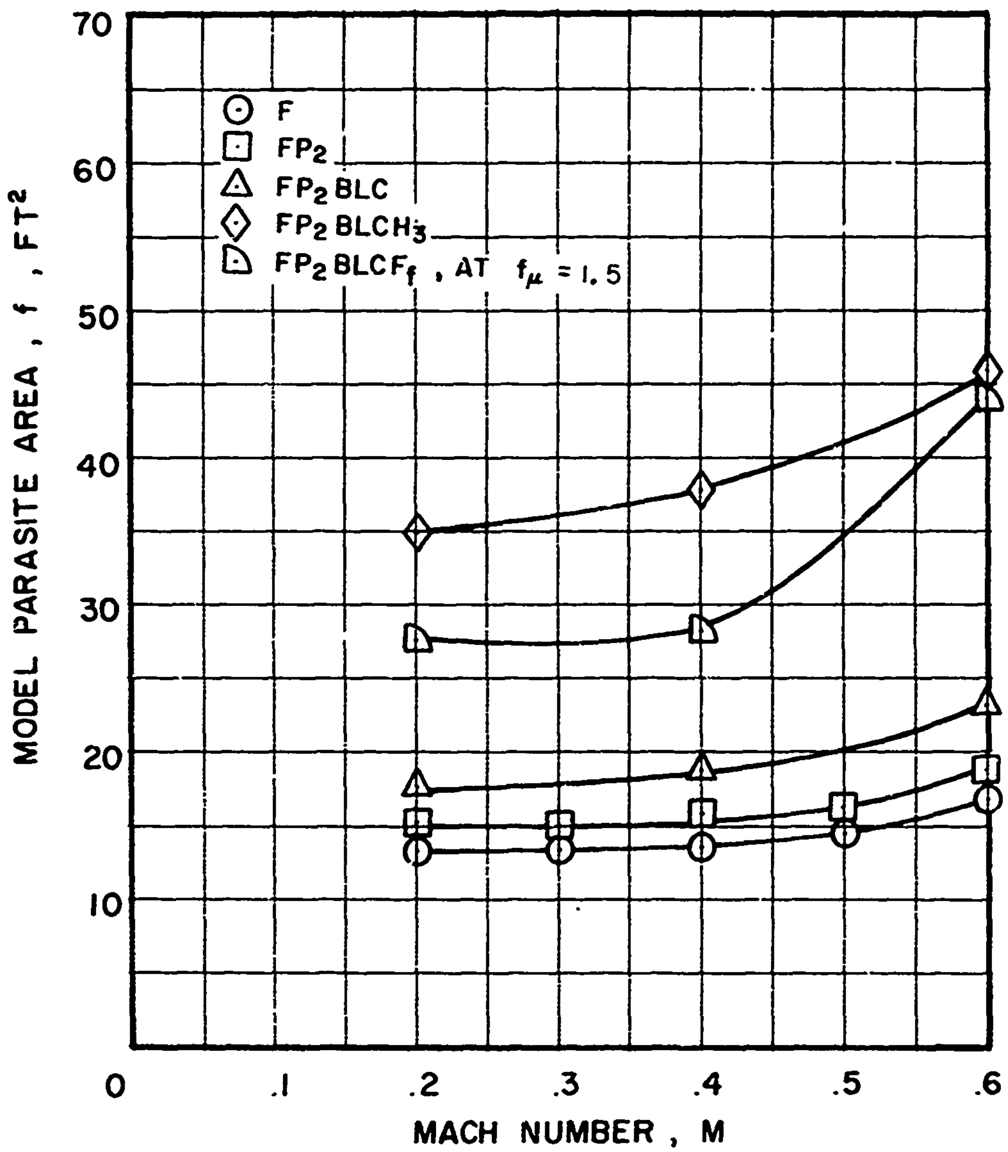


Figure 41. The Effect of Mach Number on the Drag of Several Wingless Helicopter Configurations Associated with the Floating Fairing at α = 0 Deg.

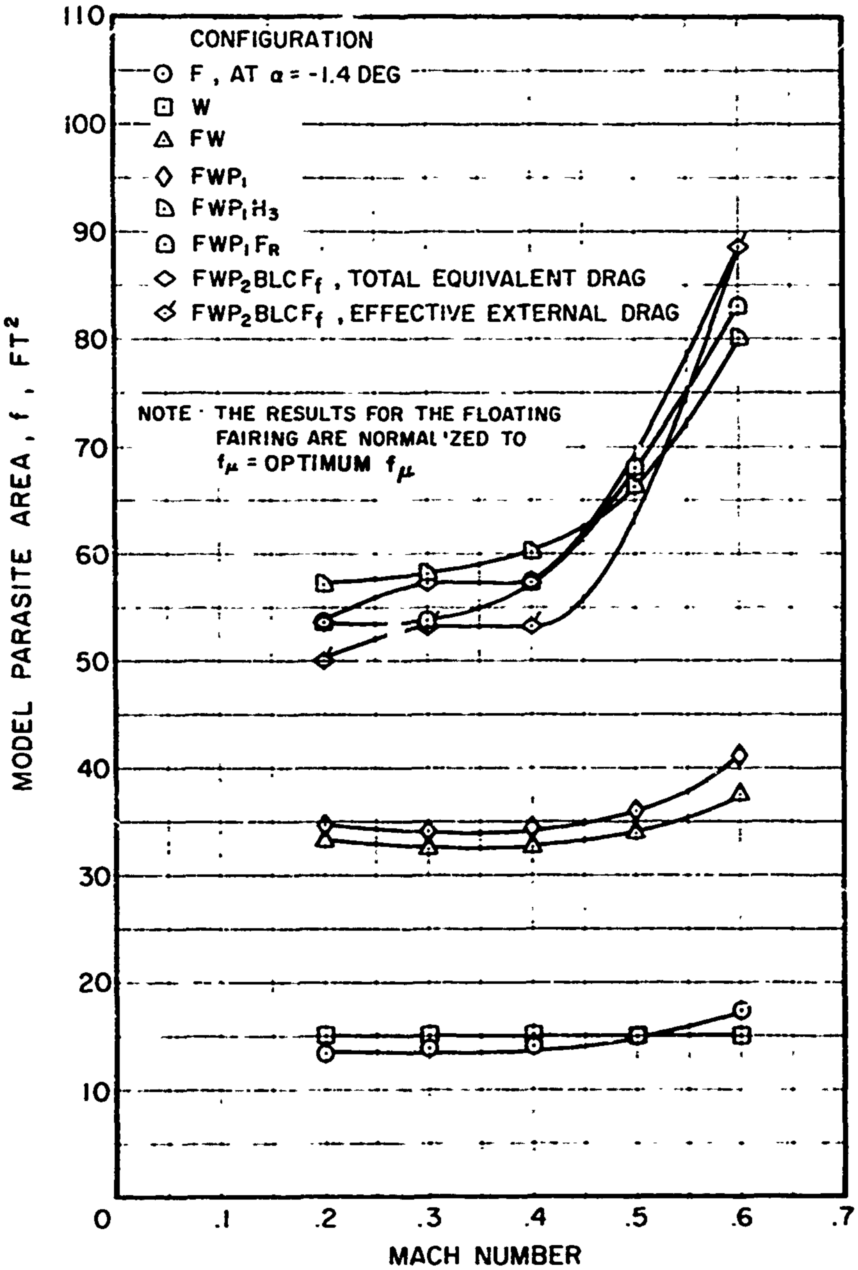
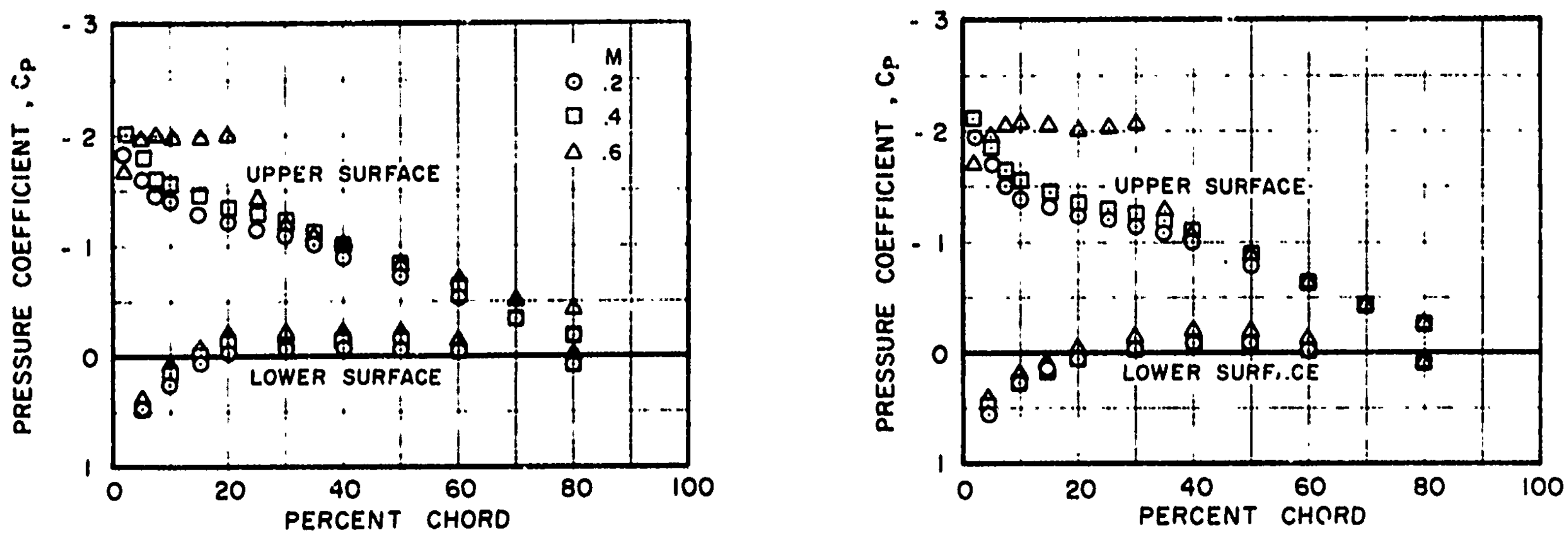


Figure 42. The Effect of Mach Number on the Drag of Several Helicopter Configurations with Wing at L/q = 292 ft^2.



(a) INBOARD , 1/4 SEMISPAN

(b) OUTBOARD , 1/2 SEMISPAN

Figure 43. The Effect of Mach Number on the Wing Pressure Distribution, Configuration FWP_1, α = 0.9 Deg.

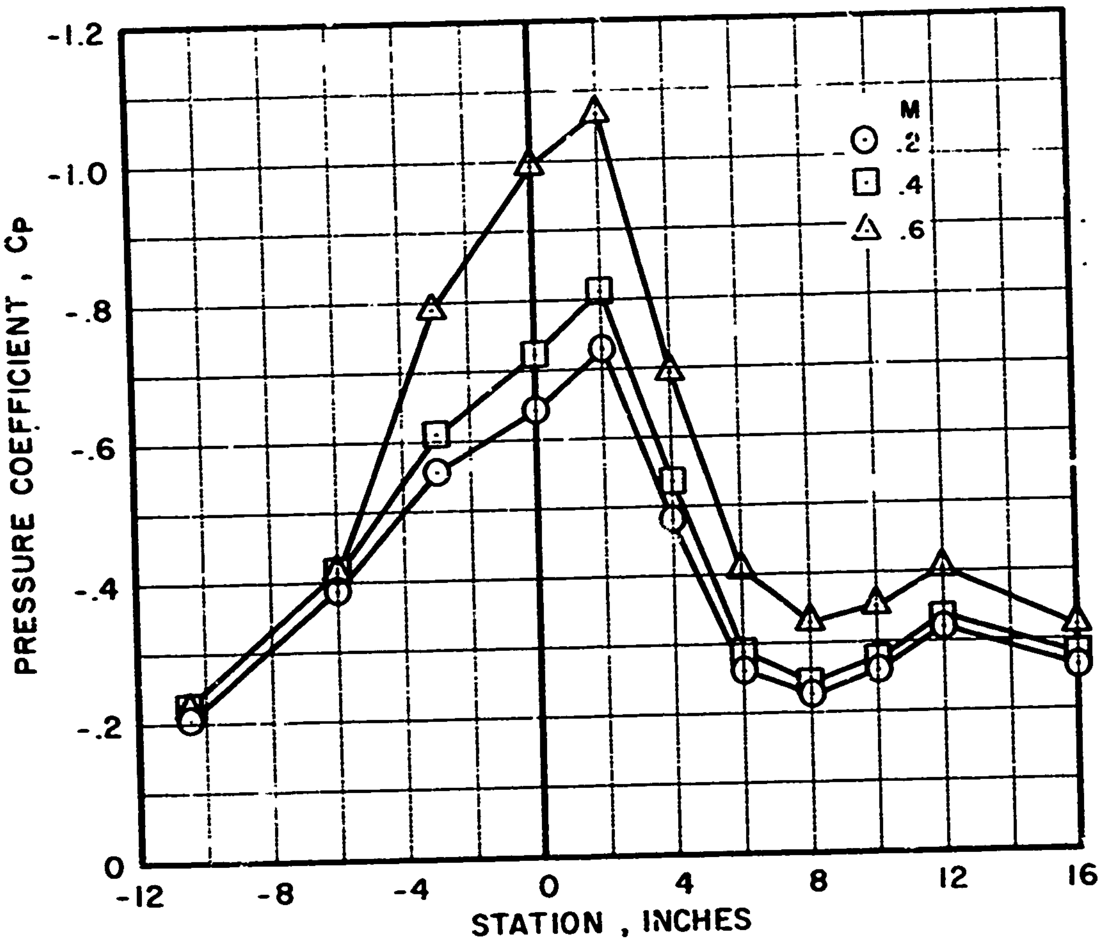


Figure 44. The Effect of Mach Number on the Pylon Pressure Distribution, Configuration FWP_1, α = 0.9 Deg, 60-Deg Section Cut.

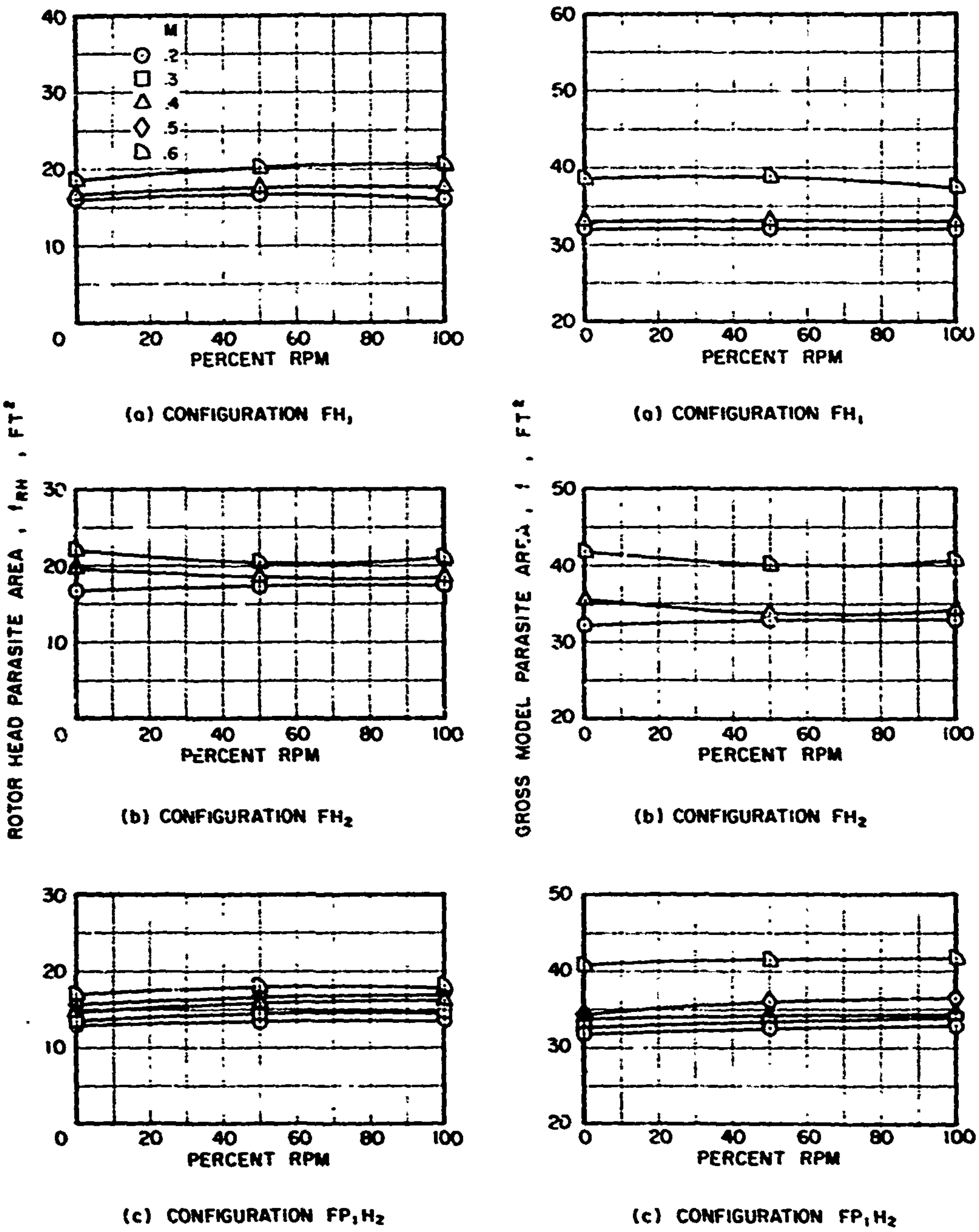
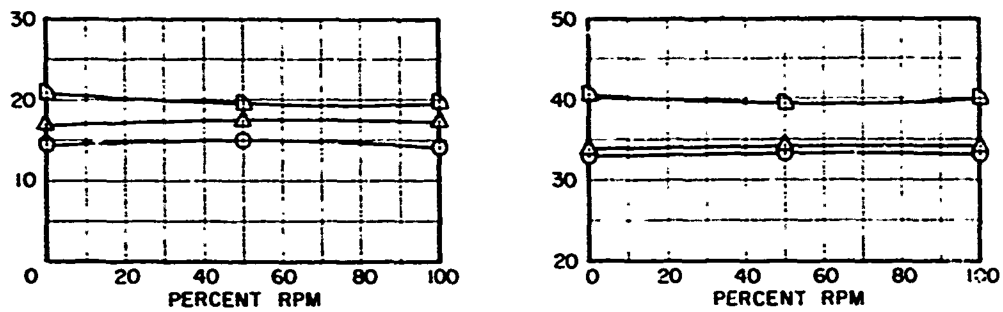
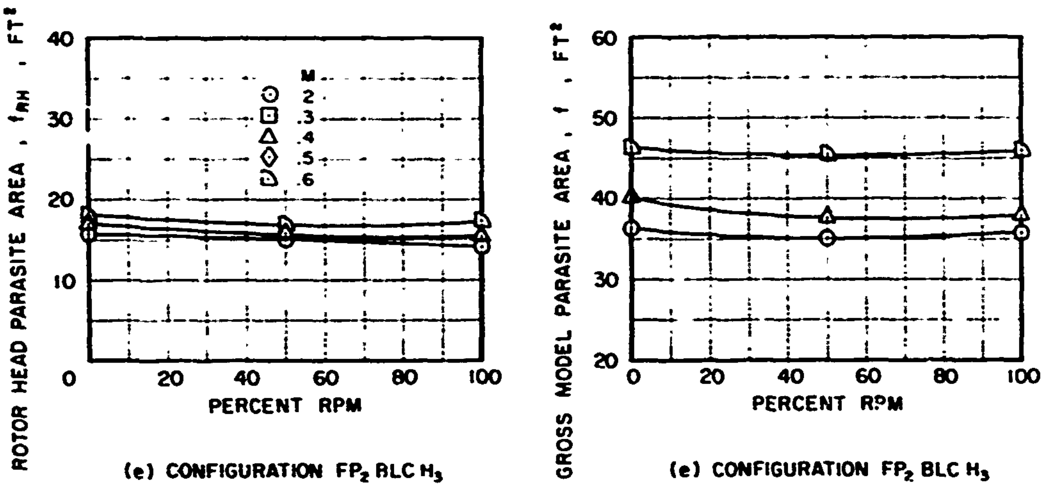


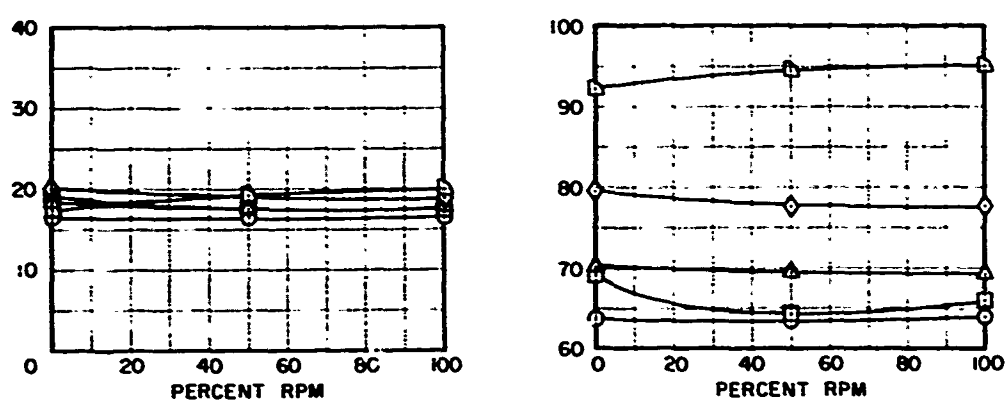
Figure 45. The Effect of Rotor Head RPM on the Rotor Head and Gross Model Drag for Six Unfaired Rotor Head Configurations.



(d) CONF IRATION FH$_3$ (d) CONFIGURATION FH$_3$



(e) CONFIGURATION FP$_2$ BLC H$_3$ (e) CONFIGURATION FP$_2$ BLC H$_3$



(f) CONFIGURATION FWP$_1$H$_3$ (f) CONFIGURATION FWP$_1$H$_3$

Figure 45. Concluded.

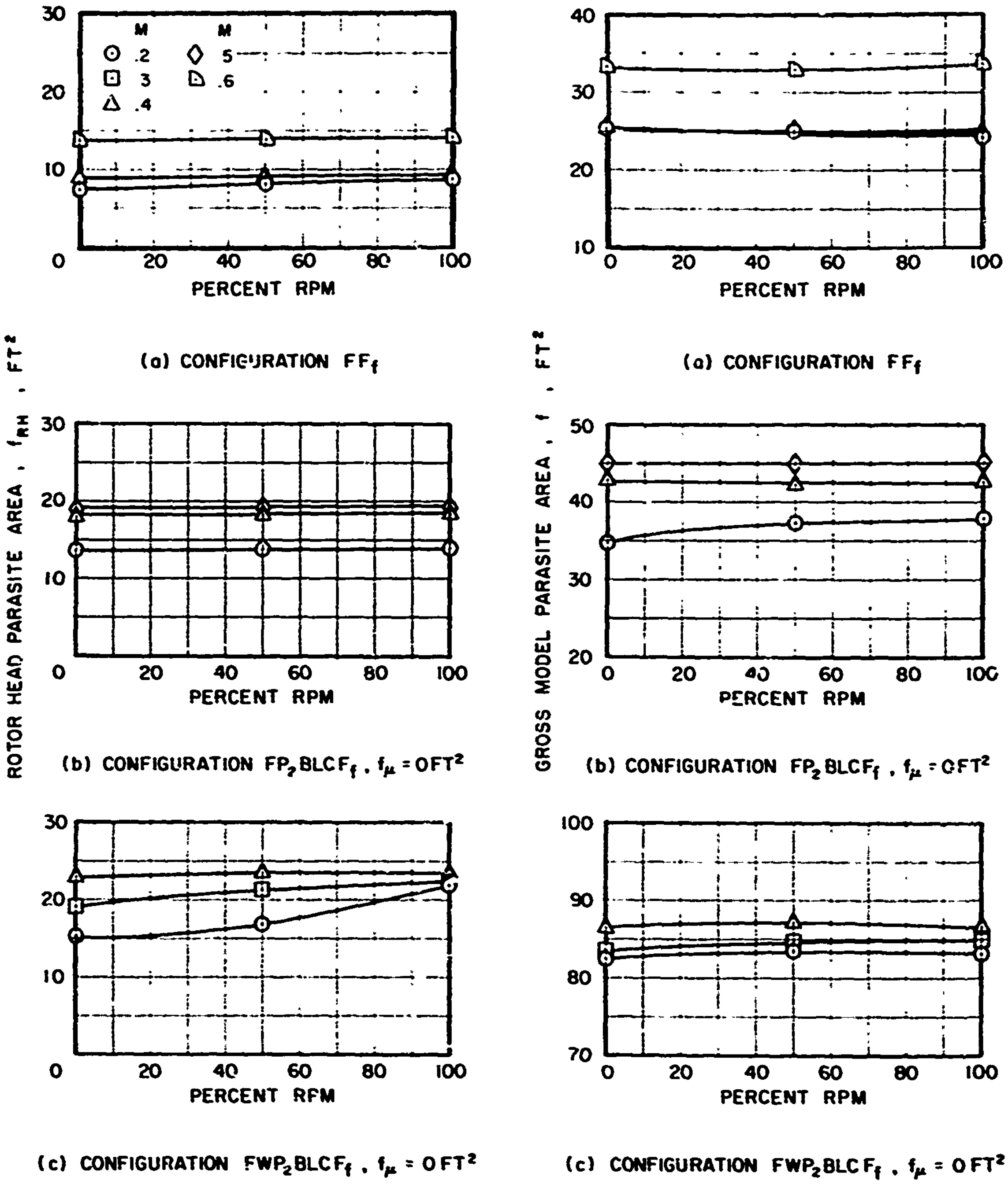
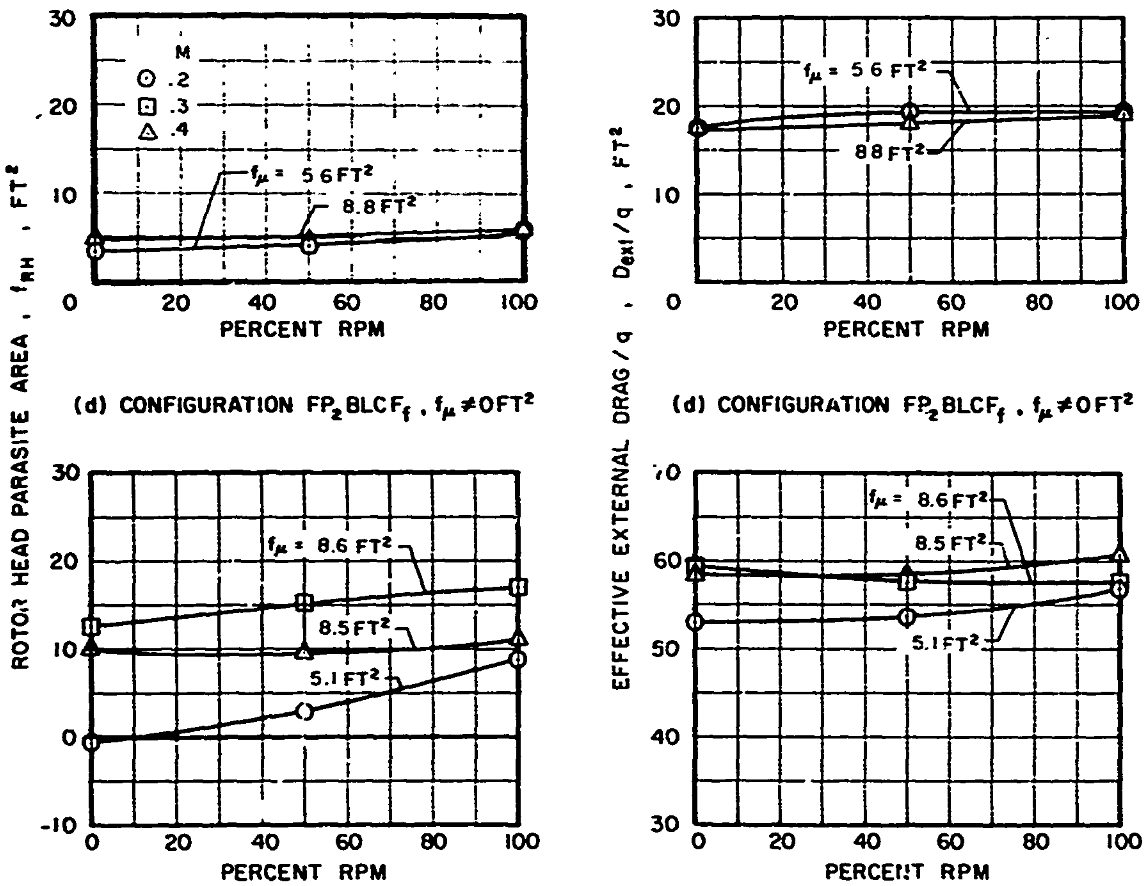


Figure 46. The Effect of Rotor Head RPM on the Rotor Head and Gross Model Drag for Three Floating Fairing Configurations.



(d) CONFIGURATION FP_2BLCF_f , $f_\mu \neq 0$ FT²

(d) CONFIGURATION FP_2BLCF_f , $f_\mu \neq 0$ FT²

(e) CONFIGURATION FWP_2BLCF_f , $f_\mu \neq 0$ FT²

(e) CONFIGURATION FWP_2BLCF_f , $f_\mu \neq 0$ FT²

Figure 46. Concluded.

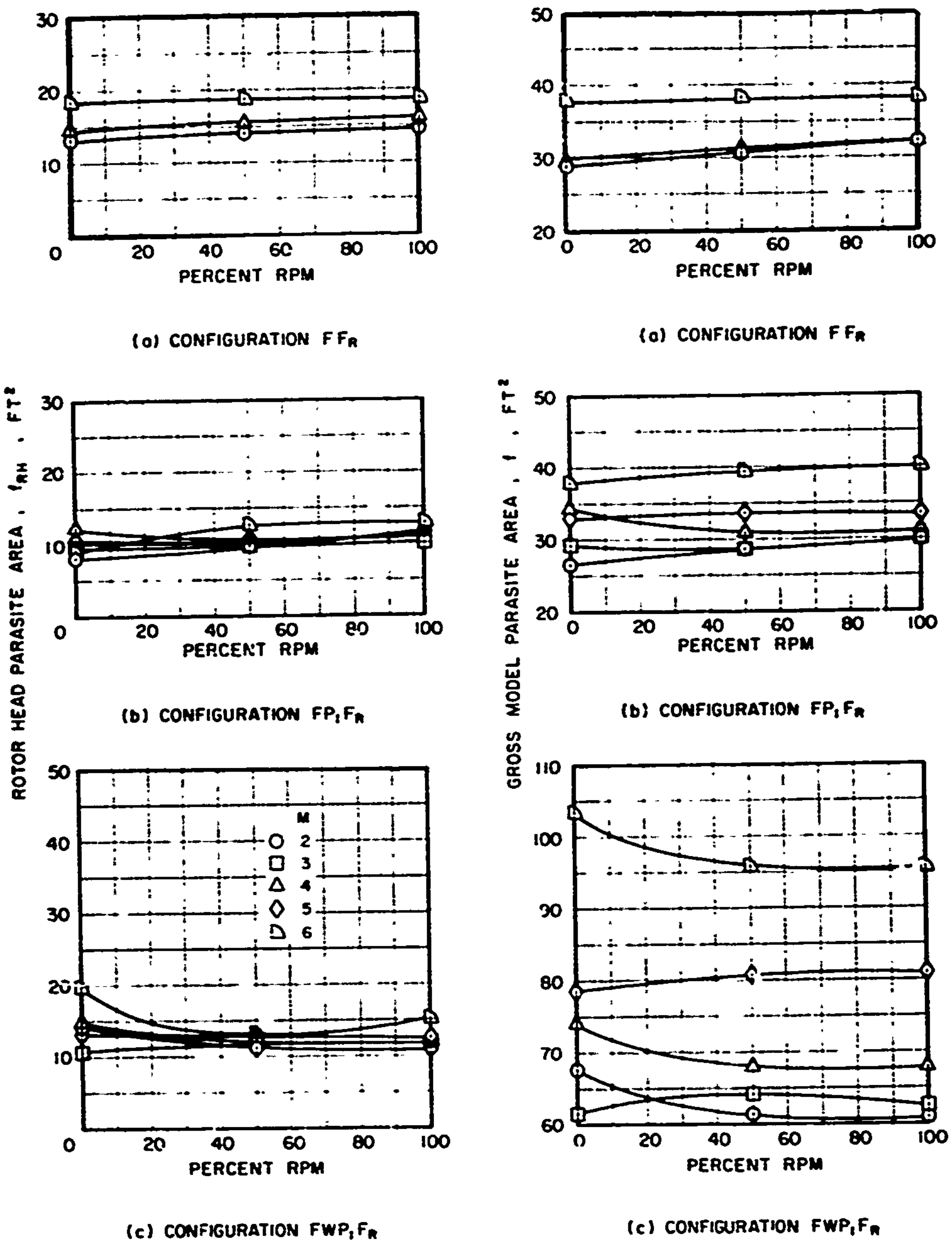
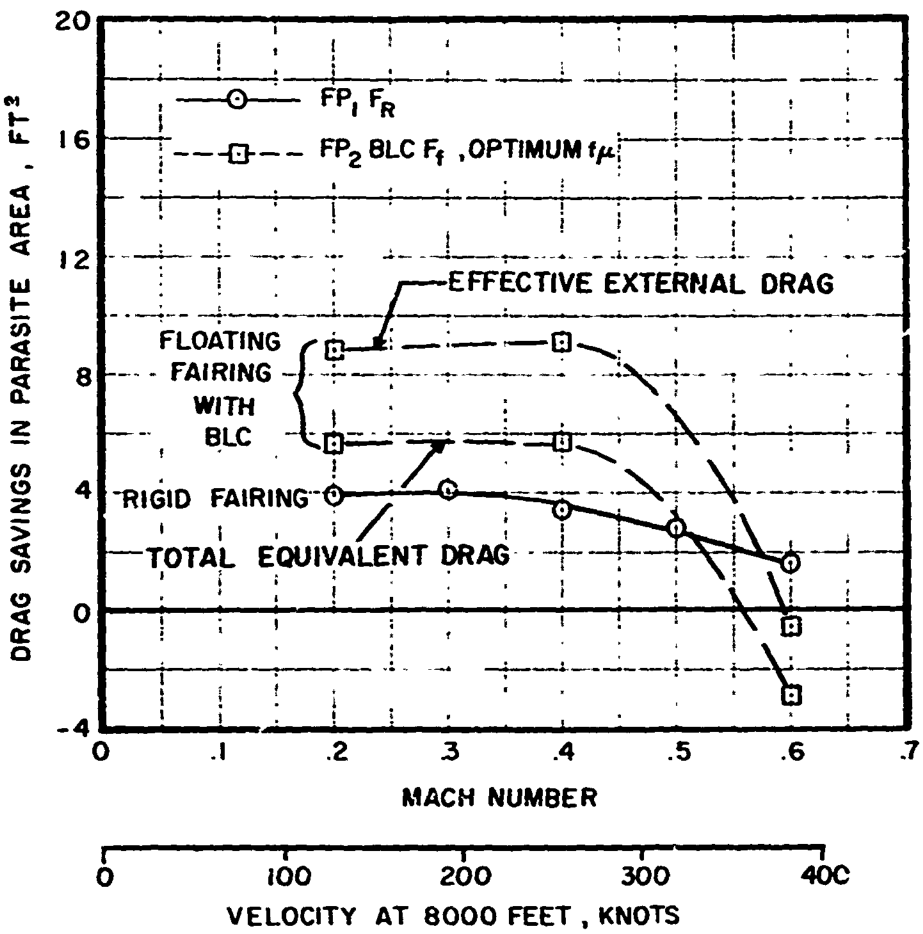
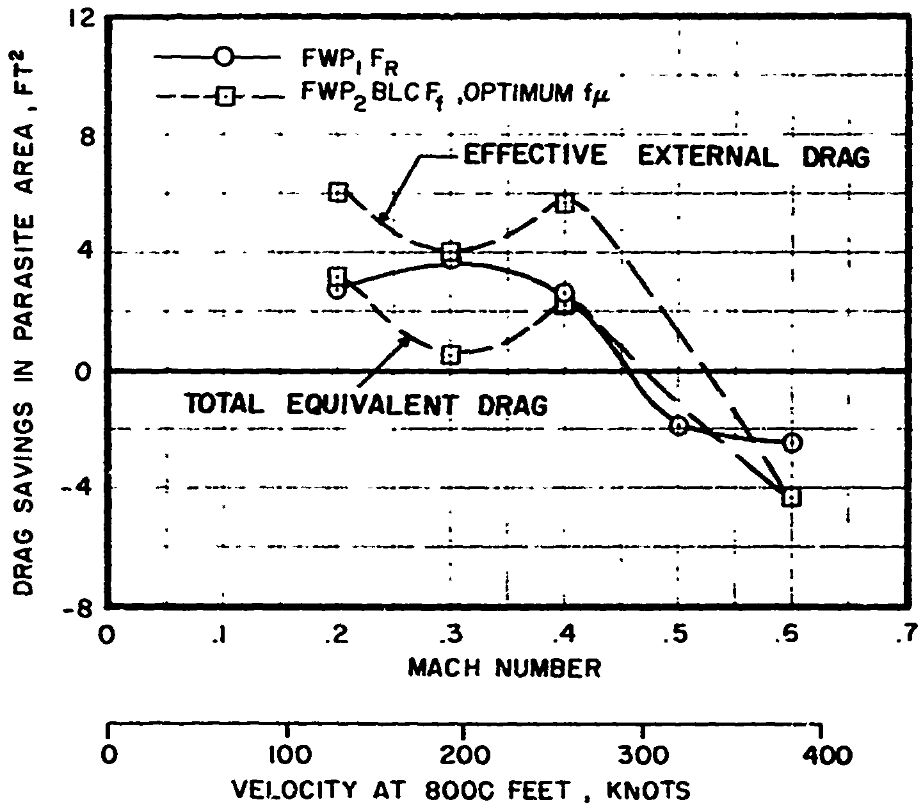


Figure 47. The Effect of Rotor Head RPM on the Rotor Head and Gross Model Drag for Three Rigid Fairing Configurations.



(a) WINGLESS CONFIGURATIONS, α = 0 DEG

Figure 48. Drag Savings for the Rigid and Floating Fairings Versus Mach Number.



(b) COMPOUND CONFIGURATIONS AT $L/q = 292\ FT^2$
(CRUISE LIFT CONDITION)

Figure 48. Concluded.

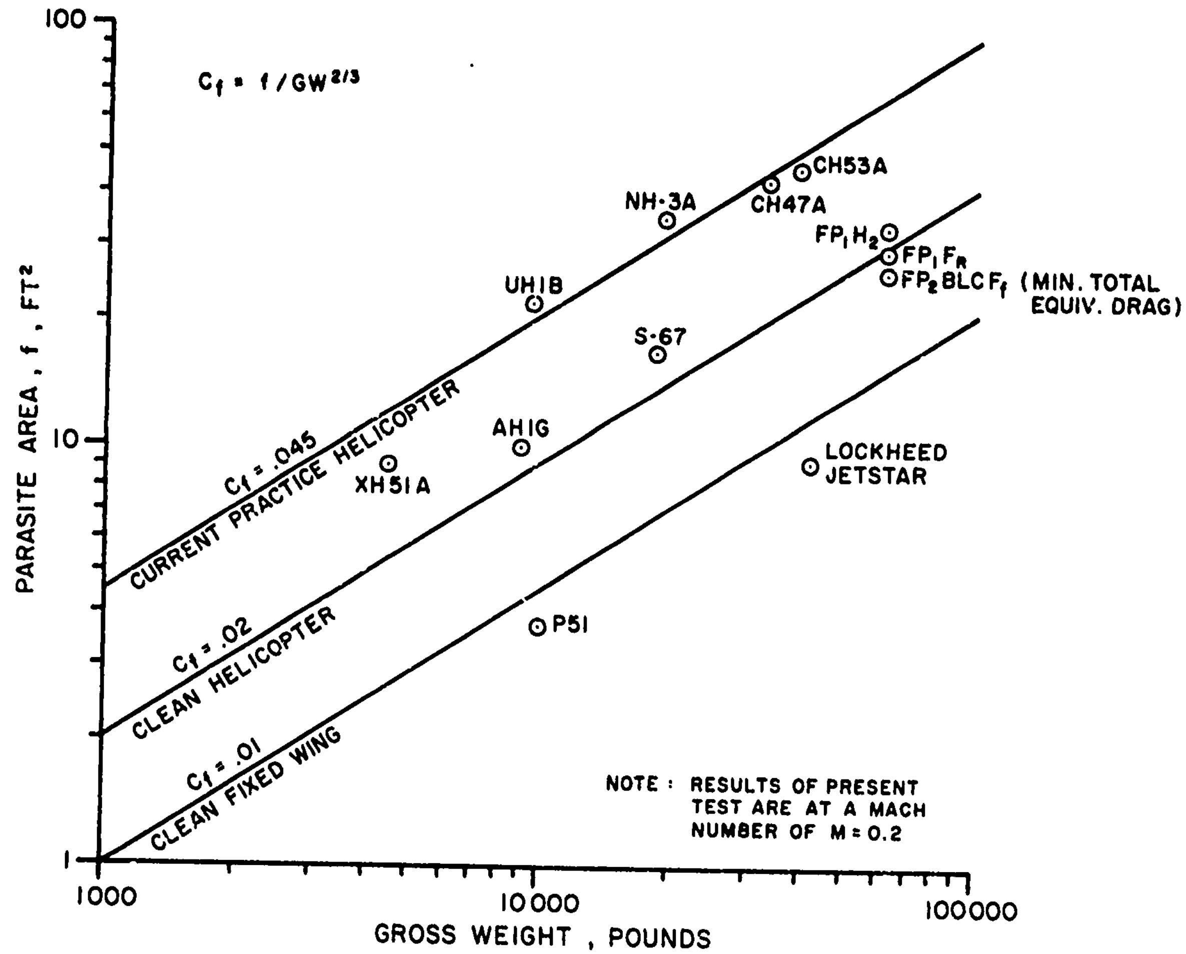


Figure 49. Typical Helicopter Parasite Drag Comparison.

APPENDIX I

BALANCE DATA AND MODEL OPERATING CONDITION TABLES

TABLE V. DATA SUMMARY FOR CONFIGURATION F

TEST CONDITIONS			TUNNEL BALANCE DATA		
M	q, PSF	α, DEG	L/q, FT^2	f, FT^2	PM/q, FT^3
.2	56.6	-.1	-14.7	13.9	115.
.2	56.7	2.0	-9.4	13.2	405.
.2	56.6	4.0	-5.0	12.4	684.
.2	55.8	6.1	-1.3	12.3	957.
.2	55.6	8.1	4.1	12.7	1179.
.2	55.3	10.0	12.5	13.4	1312.
.2	56.1	12.1	24.6	14.8	1406.
.2	57.0	15.0	43.6	18.7	1512.
.2	56.1	-.1	-14.9	13.8	129.
.2	57.4	-2.2	-20.8	14.8	-110.
.2	56.0	-4.3	-28.3	15.8	-288.
.2	56.5	-6.2	-37.9	17.6	-395.
.2	57.0	-8.4	-48.6	19.5	-459.
.2	56.9	-10.4	-59.0	23.9	-551.
.2	57.0	-12.4	-68.3	31.6	-807.
.2	57.1	-15.4	-82.4	42.6	-990.
.2	57.0	-15.4	-82.6	42.7	-993.
.2	55.8	-.1	-15.7	13.7	118.
.3	121.5	-.1	-14.7	13.6	133.
.3	122.9	-.0	-	-	-
.3	122.6	4.1	-5.2	12.2	699.
.3	122.1	6.0	-.8	12.2	939.
.3	122.5	7.9	3.7	12.2	1189.
.3	121.8	.0	-	-	-
.3	124.5	11.9	22.7	14.4	1458.
.3	126.3	-.1	-15.0	13.6	133.
.3	124.8	-2.3	-21.2	14.4	-122.
.3	123.7	-4.3	-28.5	15.6	-296.
.3	124.1	-6.3	-37.7	17.1	-421.
.3	123.0	-8.3	-48.7	19.3	-507.
.3	123.4	-10.4	-60.6	22.1	-566.
.3	123.2	-12.4	-67.1	30.0	-825.
.3	122.9	-.1	-14.6	13.5	129.
.4	211.7	-.1	-14.7	13.8	142.
.4	212.3	2.0	-9.7	13.2	418.
.4	213.6	3.9	-5.2	12.4	674.
.4	211.9	6.0	-.3	12.3	939.
.4	210.8	8.0	4.6	12.5	1196.
.4	212.7	-.0	-15.0	13.7	148.
.4	212.0	-2.3	-21.3	14.9	-124.
.4	210.1	-4.2	-28.0	15.9	-300.
.4	209.5	-6.3	-36.7	17.5	-443.
.4	210.5	-8.2	-46.6	19.7	-560.
.4	213.3	-.2	-15.1	14.0	127.
.3	123.3	2.0	-10.3	12.9	400.
.3	124.7	10.1	12.7	12.9	1334.
.5	315.8	-.0	-13.9	14.5	152.
.5	314.5	2.1	-9.0	13.7	430.
.5	314.3	3.0	-6.5	13.2	557.
.5	310.9	3.9	-4.2	13.3	688.
.5	314.4	6.0	1.5	13.1	934.
.5	314.5	-.0	-14.0	14.8	152.
.5	316.6	-2.2	-20.5	15.6	-120.
.5	314.1	-4.3	-28.1	17.2	-329.
.5	315.4	-3.3	-24.1	16.5	-234.
.5	311.0	-6.2	-36.0	19.4	-505.
.5	315.8	-.3	-14.8	14.6	126.
.6	425.0	-.3	-14.3	16.7	96.
.6	424.9	1.0	-11.2	16.4	266.
.6	424.1	2.0	-8.7	16.0	406.
.6	423.4	3.0	-5.8	15.5	547.
.6	423.1	4.0	-3.1	14.9	684.
.6	425.1	-.0	-13.6	16.7	114.
.6	424.3	-1.2	-16.6	17.5	-51.
.6	425.7	-2.2	-19.2	18.4	-172.
.6	424.4	-3.3	-22.8	19.4	-308.
.6	426.1	-4.4	-25.6	21.0	-448.
.6	426.4	-.2	-11.6	16.9	42.

TABLE VI. DATA SUMMARY FOR CONFIGURATION FP_1

TEST CONDITIONS			TUNNEL BALANCE DATA		
M	q, PSF	α, DEG	L/q, FT^2	f, FT^2	PM/q, FT^3
.2	56.6	-.0	-13.0	15.0	108.
.2	56.4	2.1	-7.5	14.2	360.
.2	56.6	4.0	-2.4	13.8	596.
.2	56.4	6.0	2.8	13.8	794.
.2	55.1	7.9	8.9	14.4	1010.
.2	54.3	10.0	17.6	15.9	1155.
.2	56.3	12.2	29.0	17.4	1239.
.2	56.9	15.0	47.0	21.4	1374.
.2	55.6	.0	-12.6	13.9	117.
.2	56.0	-2.3	-18.2	15.0	-113.
.2	56.9	-4.2	-26.0	15.9	-244.
.2	55.6	-6.3	-37.2	17.8	-328.
.2	56.5	-8.3	-47.5	19.4	-351.
.2	56.3	-10.3	-57.4	27.6	-444.
.2	57.0	-12.4	-67.7	32.9	-620.
.2	55.9	-15.4	-86.3	39.6	-826.
.2	55.1	-.1	-12.1	14.3	107.
.3	124.2	-.1	-12.5	14.4	109.
.3	122.8	1.9	-7.7	13.7	355.
.3	122.9	4.0	-2.3	13.3	614.
.3	123.8	5.9	2.4	13.9	832.
.3	124.5	8.0	8.5	14.2	1033.
.3	125.8	10.0	16.5	14.8	1202.
.3	121.9	12.0	28.0	17.4	1324.
.3	127.6	-.0	-12.3	14.3	118.
.3	123.5	-2.4	-20.1	15.1	-133.
.3	124.0	-4.3	-26.9	16.0	-273.
.3	125.0	-6.2	-36.2	17.2	-361.
.3	124.3	-8.3	-47.7	19.5	-426.
.3	123.8	-10.4	-56.1	26.8	-608.
.3	123.7	-12.4	-67.5	32.1	-692.
.4	212.5	-.0	-20.6	14.9	412.
.4	211.1	2.1	-17.3	14.4	762.
.4	213.4	4.1	-11.0	13.5	939.
.4	211.3	6.2	-2.7	13.7	1099.
.4	207.5	8.0	5.8	14.2	1199.
.4	213.7	-.1	-20.8	14.3	419.
.4	212.1	-2.2	-24.7	15.6	98.
.4	209.3	-4.2	-34.5	16.5	29.
.4	210.5	-6.3	-49.7	19.7	117.
.4	212.9	-8.3	-56.5	22.8	-81.
.4	214.0	-.2	-20.2	14.5	365.
.5	316.7	-.2	-17.7	15.7	281.
.5	314.4	2.0	-15.0	14.8	664.
.5	314.4	3.1	-12.8	14.6	831.
.5	316.0	4.0	-10.6	14.6	944.
.5	310.0	5.9	-2.6	14.3	1056.
.5	316.5	-.1	-16.2	15.4	263.
.5	313.3	-2.3	-21.1	16.5	-45.
.5	314.9	-3.3	-24.9	17.2	-149.
.5	312.5	-4.3	-28.6	17.9	-228.
.5	315.2	-6.3	-36.5	20.3	-390.
.5	327.6	-.0	-12.8	15.7	144.
.6	421.9	-.0	-11.5	18.4	83.
.6	423.1	.9	-8.6	17.8	181.
.6	422.0	1.9	-6.6	17.3	337.
.6	422.3	3.0	-2.6	17.3	451.
.6	425.4	4.0	.4	17.5	575.
.6	424.5	-.0	-10.4	18.4	59.
.6	422.6	-1.2	-14.6	18.8	-82.
.6	420.7	-2.2	-17.6	19.6	-205.
.6	422.0	-3.2	-20.8	20.3	-322.
.6	421.4	-4.3	-24.1	21.1	-451.
.6	420.6	-.0	-11.5	18.2	79.

TABLE VII. DATA SUMMARY FOR CONFIGURATION FP_2

TEST CONDITIONS			TUNNEL BALANCE DATA		
M	q, PSF	α, DEG	L/q, FT^2	f, FT^2	PM/q, FT^3
.2	56.9	-.1	-9.4	15.3	9.
.2	56.7	1.9	-4.0	14.4	257.
.2	56.4	4.0	1.2	14.5	508.
.2	56.9	6.0	6.0	14.5	708.
.2	56.3	8.1	13.0	15.1	900.
.2	57.2	10.1	20.7	16.4	1084.
.2	56.9	12.1	29.0	17.8	1238.
.2	57.1	15.1	46.3	21.9	1379.
.2	55.6	.0	-9.0	15.1	25.
.2	56.4	-2.2	-15.5	15.6	-206.
.2	56.3	-4.3	-22.7	16.4	-360.
.2	57.0	-6.3	-32.2	17.4	-470.
.2	57.2	-8.2	-41.9	19.1	-546.
.2	57.1	-10.3	-55.0	22.1	-573.
.2	56.8	-12.4	-67.6	26.7	-663.
.2	56.8	-15.4	-81.8	36.4	-953.
.2	56.0	-.0	-9.0	14.5	18.
.3	123.1	-.0	-9.0	14.7	8.
.3	123.3	1.9	-4.4	14.2	238.
.3	125.0	4.0	1.1	14.4	496.
.3	123.2	6.0	6.6	14.4	717.
.3	119.3	8.1	12.7	15.1	919.
.3	123.9	10.0	20.5	15.9	1095.
.3	124.7	12.1	28.6	17.5	1256.
.3	125.3	-2.2	-16.4	15.5	-224.
.3	126.2	-4.3	-23.2	16.3	-385.
.3	124.8	-6.4	-32.7	17.8	-517.
.3	124.2	-8.4	-43.4	19.4	-605.
.3	124.3	-8.4	-43.1	19.4	-611.
.3	124.2	-10.4	-54.6	22.1	-665.
.3	124.3	-12.4	-66.5	26.3	-737.
.3	125.6	-.0	-9.8	14.8	-119.
.3	126.2	-.4	-9.9	23.0	37.
.4	210.2	-.3	-10.3	15.6	-22.
.4	215.7	2.0	-3.9	14.3	241.
.4	214.2	4.0	.9	14.0	480.
.4	211.7	5.9	6.3	14.6	710.
.4	211.8	8.0	12.9	14.9	923.
.4	208.1	-2.2	-16.3	16.2	-229.
.4	212.6	-4.2	-23.3	16.8	-393.
.4	211.4	-6.3	-32.6	18.0	-530.
.4	211.2	-8.3	-42.7	20.4	-646.
.4	210.1	-.2	-10.0	15.2	-15.
.5	315.3	-.2	-9.8	16.2	-9.
.5	314.5	1.9	-3.8	15.6	223.
.5	313.1	3.0	-.7	15.3	358.
.5	310.8	4.0	2.2	15.3	477.
.5	314.6	6.0	8.1	15.6	698.
.5	315.9	-2.3	-16.4	17.0	-233.
.5	316.2	-3.3	-19.8	17.5	-335.
.5	314.3	-4.3	-23.8	18.3	-425.
.5	315.5	-6.3	-31.5	19.7	-584.
.5	316.1	-.3	-10.2	16.3	-20.
.6	421.6	-.3	-9.5	19.0	-43.
.6	423.8	.9	-5.8	18.0	103.
.6	423.4	2.0	-2.6	17.8	238.
.6	422.6	3.0	-.1	17.4	350.
.6	424.4	4.0	3.0	17.6	470.
.6	422.6	-1.2	-12.9	18.9	-153.
.6	423.1	-2.3	-16.2	19.6	-274.
.6	423.5	-3.4	-19.9	20.1	-394.
.6	421.8	-4.3	-23.2	21.3	-484.
.6	423.3	-.0	-8.9	18.5	-16.

TABLE VIII. DATA SUMMARY FOR CONFIGURATION FP_2BLC

TEST CONDITIONS			TUNNEL BALANCE DATA		
M	q, PSF	α, DEG	L/q, FT^2	f, FT^2	PM/q, FT^3
.2	61.5	-.0	-21.7	17.6	447.
.2	61.2	1.9	-16.3	17.4	698.
.2	62.5	4.0	-8.2	16.8	848.
.2	61.9	5.9	-1.3	17.6	955.
.2	62.5	-2.4	-25.2	17.3	126.
.2	61.6	-4.4	-37.8	19.4	122.
.2	63.1	-6.5	-48.9	20.5	118.
.2	61.8	-.0	-20.8	17.6	414.
.4	215.9	-.0	-18.9	18.1	362.
.4	215.9	2.0	-17.4	18.1	748.
.4	213.2	4.0	-11.1	17.9	960.
.4	216.4	6.0	-3.7	18.3	1108.
.4	218.8	-2.1	-23.2	18.0	90.
.4	215.5	-4.1	-32.5	19.6	-23.
.4	215.9	-6.1	-48.5	21.8	142.
.6	429.5	-.0	-13.7	23.0	164.
.6	429.1	2.0	-8.3	22.6	436.
.6	429.6	4.0	-2.3	22.6	670.
.6	429.8	-2.0	-19.1	23.8	-97.
.6	427.6	-4.1	-25.4	25.7	-344.
.6	430.1	-.0	-11.7	23.0	104.

TABLE IX. DATA SUMMARY FOR CONFIGURATION FS

TEST CONDITIONS			TUNNEL BALANCE DATA			ROTOR DATA	
M	q, PSF	α, DEG	L/q, FT^2	f, FT^2	PM/q, FT^3	N, RPM	f_{RH}, FT^2
.2	58.2	-.0	-10.6	18.7	189.	1422.	3.2
.2	57.7	2.0	-10.7	17.8	691.	1422.	2.9
.2	57.6	4.0	-6.8	17.1	970.	1422.	2.3
.2	58.2	6.0	-1.3	17.2	1159.	1422.	2.2
.2	53.0	8.0	7.5	17.3	1304.	1422.	1.6
.2	57.3	10.1	17.8	18.2	1418.	1422.	1.4
.2	57.5	12.1	28.9	20.0	1510.	1422.	.6
.2	57.4	15.1	50.4	24.2	1609.	1422.	1.1
.2	57.2	-2.0	-14.9	19.4	-26.	1422.	4.2
.2	56.9	-4.0	-20.9	20.4	-208.	1422.	4.7
.2	57.1	-6.1	-31.5	21.5	-299.	1422.	5.0
.2	56.5	-8.1	-52.3	[illegible]	10.	1422.	5.3
.2	56.8	-10.1	-55.5	29.3	-288.	1422.	5.0
.2	57.6	-12.1	-62.3	35.9	-642.	1422.	5.3
.2	58.0	-15.2	-75.2	[illegible]	-1012.	1422.	4.7
.2	57.5	-.0	-7.9	18.3	226.	1422.	1.7
.2	56.9	-.0	-8.0	18.2	230.	711.	1.7
.4	215.6	-.0	-11.0	19.1	185.	0.	4.2
.4	213.2	-.0	-11.0	19.0	181.	711.	4.2
.4	213.2	-.0	-11.1	18.9	173.	1422.	4.2
.4	213.7	2.0	-6.2	18.1	478.	1422.	4.1
.4	211.4	4.0	-5.3	17.5	852.	1422.	4.0
.4	209.9	6.0	-3.1	17.1	1207.	1422.	3.9
.4	208.4	8.1	5.3	17.6	1384.	1422.	3.8
.4	211.5	-2.1	-16.4	19.7	-64.	1422.	4.2
.4	215.0	-4.0	-23.2	20.8	-257.	1422.	4.9
.4	212.9	-6.1	-32.4	22.0	-380.	1422.	4.7
.4	213.5	-3.1	-42.7	24.5	-497.	1422.	4.7
.4	212.5	-.0	-10.8	18.9	181.	1422.	4.2

TABLE X. DATA SUMMARY FOR CONFIGURATION FH_1

TEST CONDITIONS			TUNNEL BALANCE DATA			ROTOR DATA	
M	q, PSF	α, DEG	L/q, FT^2	f, FT^2	PM/q, FT^3	N, RPM	f_{RH}, FT^2
.2	53.0	-15.2	-96.7	57.9	-801.	1422.	18.5
.2	57.9	-12.2	-70.7	51.7	-448.	1422.	18.3
.2	58.7	-10.2	-63.9	44.5	-159.	1422.	17.5
.2	53.2	-8.2	-58.7	40.0	88.	1422.	17.3
.2	58.3	-6.1	-49.4	36.2	254.	1422.	17.5
.2	54.2	-4.0	-35.0	34.4	224.	1422.	17.6
.2	53.7	-2.0	-24.1	33.0	239.	1422.	16.4
.2	57.7	-.0	-19.5	32.1	512.	1422.	16.2
.2	61.0	-.0	-18.4	32.2	473.	711.	16.9
.2	57.3	-.0	-18.5	32.5	501.	0.	16.1
.2	56.9	2.0	-17.2	31.2	889.	1422.	16.6
.2	58.4	4.0	-10.2	31.0	1101.	1422.	17.3
.2	57.9	6.0	-2.6	31.0	1281.	1422.	17.3
.2	58.2	8.0	5.4	31.5	1395.	1422.	18.2
.2	58.2	10.1	15.7	32.9	1487.	1422.	18.5
.2	57.3	12.1	27.1	34.4	1556.	1422.	18.1
.2	58.3	15.1	46.5	38.9	1684.	1422.	19.7
.3	125.0	12.1	26.0	34.9	1618.	1422.	19.0
.3	125.4	10.1	14.3	32.7	1520.	1422.	18.1
.3	127.7	8.0	3.4	31.7	1417.	1422.	18.1
.3	125.9	6.0	-5.1	31.3	1314.	1422.	17.5
.3	126.5	4.0	-12.1	31.1	1142.	1422.	17.4
.3	127.0	2.0	-16.9	31.7	883.	1422.	17.5
.3	126.8	-.0	-18.8	32.6	489.	1422.	16.9
.3	126.8	-2.1	-25.2	33.0	264.	1422.	17.5
.3	126.3	-4.1	-35.9	34.2	230.	1422.	17.2
.3	126.2	-6.1	-49.6	36.5	290.	1422.	17.2
.3	127.3	-8.1	-59.9	38.7	176.	1422.	17.7
.3	127.4	-10.1	-62.5	44.5	-218.	1422.	18.4
.3	127.1	-12.2	-72.4	49.3	-419.	1422.	18.1
.4	215.5	-8.1	-56.9	42.4	3.	1422.	17.9
.4	215.1	-6.1	-48.6	38.1	195.	1422.	18.1
.4	214.6	-4.1	-32.9	35.7	71.	1422.	17.6
.4	214.9	-2.0	-23.9	34.1	211.	1422.	17.6
.4	215.3	-.0	-18.9	33.4	453.	1422.	17.6
.4	214.6	-.0	-18.9	33.3	480.	1422.	17.6
.4	215.0	-.0	-18.6	33.3	437.	711.	17.6
.4	215.1	-.0	-17.9	31.9	434.	0.	16.6
.4	214.9	2.0	-15.4	32.7	789.	1422.	17.7
.4	214.4	4.0	-12.9	32.1	1141.	1422.	18.0
.4	214.3	6.0	-6.7	32.0	1356.	1422.	18.2
.4	214.9	8.0	2.2	32.5	1495.	1422.	18.2
.5	316.8	6.0	-6.7	33.9	1407.	1422.	19.0
.5	316.1	4.0	-8.6	34.1	1000.	1422.	18.9
.5	316.4	3.0	-8.9	34.5	810.	1422.	18.9
.5	316.7	2.0	-10.8	34.7	650.	1422.	18.7
.5	315.9	-.1	-15.7	35.3	355.	1422.	18.7
.5	317.5	-2.0	-21.3	36.4	129.	1422.	19.0
.5	315.4	-3.0	-25.0	37.4	23.	1422.	18.9
.5	317.1	-4.1	-29.3	38.1	-72.	1422.	19.1
.5	316.6	-6.1	-37.6	40.2	-216.	1422.	19.4
.6	422.2	-4.0	-26.2	42.3	-158.	1422.	20.4
.6	424.7	-3.0	-23.1	41.3	-46.	1422.	20.4
.6	422.6	-2.0	-20.6	40.7	79.	1422.	20.2
.6	422.6	-1.0	-16.9	39.6	210.	1422.	20.3
.6	423.1	-.0	-14.4	39.1	343.	1422.	20.3
.6	422.5	-.0	-14.3	39.1	337.	711.	20.3
.6	423.6	-.0	-14.8	37.4	327.	0.	18.6
.6	422.4	1.0	-11.7	38.6	480.	1422.	20.5
.6	423.9	2.0	-9.0	38.4	613.	1422.	20.8
.6	423.6	3.0	-6.0	38.4	747.	1422.	21.0
.6	424.3	4.0	-3.3	37.6	874.	1422.	20.9

TABLE XI. DATA SUMMARY FOR CONFIGURATION FH_2

TEST CONDITIONS			TUNNEL BALANCE DATA			ROTOR DATA	
M	q,PSF	α,DEG	L/q,FT²	f,FT²	PM/q,FT³	N,RPM	f_{RH},FT²
.2	58.7	-15.2	-87.8	62.7	-793.	1422.	20.5
.2	58.6	-12.2	-73.2	52.9	-470.	1422.	15.0
.2	58.4	-10.1	-66.5	45.7	-169.	1422.	20.0
.2	58.1	-8.1	-59.2	40.3	120.	1422.	19.1
.2	57.6	-6.1	-42.0	36.8	-45.	1422.	18.8
.2	57.6	-4.1	-29.0	35.1	5.	1422.	17.5
.2	58.5	-2.1	-21.2	34.0	179.	1422.	17.3
.2	59.0	-.0	-15.6	32.9	434.	1422.	17.7
.2	58.5	-.0	-16.5	33.1	436.	711.	17.6
.2	58.5	-.0	-15.6	32.3	430.	0.	16.8
.2	58.3	2.0	-15.2	32.2	882.	1422.	17.3
.2	58.6	4.0	-10.3	31.9	1102.	1422.	18.0
.2	58.7	6.0	-2.2	32.0	1292.	1422.	17.6
.2	58.2	8.0	7.4	32.5	1425.	1422.	18.0
.2	58.3	10.1	18.0	33.9	1512.	1422.	19.1
.2	59.5	12.0	29.5	35.1	1556.	1422.	18.9
.2	58.5	14.1	45.9	39.0	1712.	1422.	15.8
.3	126.3	12.1	28.7	35.6	1619.	1422.	18.9
.3	127.1	10.1	16.4	33.1	1537.	1422.	18.0
.3	126.9	8.0	5.3	32.4	1438.	1422.	17.6
.3	127.2	6.0	-3.7	32.2	1323.	1422.	17.4
.3	127.0	4.0	-11.2	32.1	1132.	1422.	17.2
.3	126.9	2.0	-13.7	32.6	767.	1422.	17.3
.3	126.4	-.0	-16.6	33.3	419.	1422.	17.3
.3	126.7	-2.1	-21.9	34.1	162.	1422.	17.6
.3	126.7	-4.1	-29.7	35.3	-28.	1422.	17.6
.3	126.3	-6.1	-41.1	36.8	-98.	1422.	18.2
.3	126.1	-8.1	-54.7	39.0	-94.	1422.	18.1
.3	127.3	-10.2	-71.2	43.4	7.	1422.	19.1
.3	128.2	-12.2	-72.3	49.4	-458.	1422.	19.4
.4	216.7	-8.1	-50.6	40.6	-264.	1422.	19.1
.4	214.9	-6.1	-40.1	38.2	-181.	1422.	19.1
.4	215.4	-4.1	-29.6	36.8	-71.	1422.	18.9
.4	214.9	-2.1	-22.2	35.5	115.	1422.	18.7
.4	214.9	-.0	-16.7	34.4	378.	1422.	18.5
.4	214.9	-.0	-16.6	34.2	368.	711.	18.5
.4	213.9	-.0	-17.3	35.7	389.	0.	19.7
.4	214.1	2.0	-11.7	33.6	672.	1422.	18.6
.4	214.7	4.0	-7.4	33.2	965.	1422.	18.7
.4	215.0	6.0	-5.1	33.0	1338.	1422.	18.7
.4	210.3	8.0	4.0	33.2	1493.	1422.	18.5
.5	314.3	6.0	-.1	34.8	1211.	1422.	19.7
.5	316.1	4.0	-3.9	35.4	903.	1422.	19.6
.5	314.1	3.0	-7.7	35.5	785.	1422.	19.7
.5	314.4	2.0	-10.4	36.1	646.	1422.	19.4
.5	315.6	-.0	-15.2	36.4	350.	1422.	19.6
.5	315.0	-.0	-15.2	36.5	351.	1422.	19.6
.5	316.9	-2.0	-19.5	37.8	47.	1422.	19.6
.5	316.6	-3.0	-23.1	38.4	-69.	1422.	19.8
.5	315.0	-3.1	-23.2	38.4	-76.	1422.	19.8
.5	315.7	-4.0	-27.1	38.8	-170.	1422.	19.8
.5	315.0	-6.1	-35.7	40.8	-337.	1422.	19.9
.6	424.2	-4.0	-23.6	43.2	-274.	1422.	21.2
.6	423.3	-3.0	-19.9	42.5	-192.	1422.	21.1
.6	423.4	-2.0	-16.4	42.1	-66.	1422.	21.1
.6	422.9	-1.0	-13.1	41.3	58.	1422.	20.8
.6	422.1	-.0	-10.5	40.8	203.	1422.	20.9
.6	422.3	-.0	-10.5	40.2	193.	711.	20.5
.6	421.3	-.0	-10.4	41.9	205.	0.	22.1
.6	422.9	1.0	-7.3	39.9	325.	1422.	20.8
.6	422.9	2.0	-3.8	40.0	444.	1422.	20.9
.6	424.7	3.0	-1.0	39.6	575.	1422.	20.9
.6	421.5	4.0	1.3	39.5	744.	1422.	21.0

TABLE XII. DATA SUMMARY FOR CONFIGURATION FH_3

TEST CONDITIONS			TUNNEL BALANCE DATA			ROTOR DATA	
M	q, PSF	α, DEG	L/q, FT²	f, FT²	PM/q, FT³	N, RPM	f_{RH}, FT²
.2	57.7	-.0	-13.8	33.0	262.	1422.	15.1
.2	57.0	2.0	-8.1	32.6	2197.	1422.	14.6
.2	55.0	4.0	-2.3	32.4	3560.	1422.	14.9
.2	56.3	6.0	2.7	32.3	4062.	1422.	14.7
.2	57.0	-.0	-13.9	33.2	268.	1422.	14.3
.2	56.7	-.0	-14.0	33.1	273.	1422.	14.3
.2	56.7	2.0	-8.3	32.5	517.	1422.	14.6
.2	56.9	4.0	-2.6	32.6	750.	1422.	14.9
.2	56.6	6.0	2.6	32.7	987.	1422.	14.7
.2	55.4	8.0	9.9	33.5	1231.	1422.	14.1
.2	55.9	10.0	19.1	34.8	1429.	1422.	15.3
.2	56.5	12.1	28.6	36.1	1495.	1422.	16.1
.2	56.9	14.5	44.5	39.1	1575.	1422.	16.3
.2	56.7	-.0	-13.7	33.1	271.	1422.	14.3
.2	57.9	-.0	-14.5	33.1	278.	711.	15.0
.2	57.9	-.0	-14.3	32.8	267.	0.	14.2
.2	58.0	-2.0	-19.9	33.9	51.	1422.	15.0
.2	57.2	-3.9	-27.2	34.7	-120.	1422.	15.3
.2	56.8	-6.1	-38.0	36.2	-246.	1422.	16.1
.2	56.8	-9.1	-49.9	38.3	-337.	1422.	16.4
.2	57.1	-10.2	-62.2	40.7	-371.	1422.	17.2
.2	56.7	-12.2	-76.3	44.4	-434.	1422.	16.3
.2	55.4	-15.2	-98.4	51.6	-527.	1422.	17.9
.3	124.7	-10.2	-61.9	40.8	-432.	1422.	17.5
.3	125.3	-8.1	-49.7	38.0	-383.	1422.	16.8
.3	124.0	-6.1	-38.3	36.2	-277.	1422.	16.6
.3	125.1	-4.1	-28.8	34.9	-159.	1422.	16.4
.3	124.7	-2.0	-21.1	33.8	38.	1422.	16.4
.3	124.8	-.0	-14.5	33.1	268.	1422.	16.1
.3	124.6	2.0	-9.2	32.6	508.	1422.	16.2
.3	123.2	4.0	-3.4	32.1	780.	1422.	16.3
.3	124.8	6.0	1.9	32.0	993.	1422.	16.7
.3	124.5	8.0	8.5	32.6	1222.	1422.	16.7
.3	124.5	10.0	16.1	33.6	1450.	1422.	16.6
.4	209.5	8.0	8.7	33.3	1270.	1422.	17.6
.4	209.7	6.1	2.5	32.7	1063.	1422.	17.6
.4	208.8	4.0	-3.7	33.0	793.	1422.	17.4
.4	207.8	2.0	-9.6	33.5	553.	1422.	17.3
.4	208.9	-.0	-15.0	33.9	289.	1422.	17.2
.4	208.7	-.0	-15.5	33.7	288.	711.	17.0
.4	209.1	-.0	-15.3	33.7	298.	0.	17.2
.4	208.8	-2.1	-21.4	34.6	59.	1422.	17.2
.4	209.1	-4.1	-28.6	35.7	-135.	1422.	17.3
.4	208.9	-6.1	-38.2	37.2	-278.	1422.	17.4
.4	208.3	-8.1	-40.8	39.2	-388.	1422.	17.7
.5	308.0	-6.1	-36.5	39.7	-324.	1422.	18.7
.5	307.4	-4.1	-28.2	37.6	-153.	1422.	18.5
.5	307.4	-2.0	-21.0	36.2	51.	1422.	18.5
.5	309.2	-.0	-14.9	35.5	295.	1422.	18.4
.5	308.5	2.0	-9.0	35.1	562.	1422.	18.6
.5	305.1	4.0	-3.5	35.1	829.	1422.	18.5
.5	307.7	6.0	2.4	34.7	1084.	1422.	18.5
.6	413.5	4.0	-2.0	39.2	839.	1422.	19.9
.6	412.9	2.0	-7.7	38.5	563.	1422.	19.9
.6	413.1	-.0	-13.5	39.5	288.	1422.	19.8
.6	413.2	-.0	-13.3	39.1	283.	711.	19.5
.6	412.6	-.0	-12.7	40.4	285.	0.	20.8
.6	412.1	-2.0	-19.7	40.5	25.	1422.	19.8
.6	411.9	-4.1	-26.7	42.3	-214.	1422.	19.7
.6	414.6	-.0	-13.3	39.5	283.	1422.	20.0

TABLE XIII. DATA SUMMARY FOR CONFIGURATION FF_R

TEST CONDITIONS			TUNNEL BALANCE DATA			ROTOR DATA	
M	q ,PSF	α,DEG	$L/q, FT^2$	f, FT^2	$PM/q, FT^3$	N,RPM	f_{RH}, FT^2
.2	58.6	-.2	-87.6	58.7	-15570.	1422.	19.3
.2	59.0	-15.2	-89.9	55.3	-859.	1422.	19.3
.2	58.9	-13.2	-79.8	46.8	-596.	1422.	15.0
.2	59.2	-10.1	-58.2	40.2	-501.	1422.	17.5
.2	58.9	-8.1	-45.1	37.5	-452.	1422.	16.1
.2	58.3	-6.1	-33.1	35.5	-370.	1422.	15.5
.2	57.9	-4.0	-21.8	34.3	-230.	1422.	14.7
.2	57.6	-2.0	-14.4	32.8	-60.	1422.	14.6
.2	57.6	-.0	-7.0	31.8	147.	1422.	14.4
.2	58.0	-.0	-6.9	30.8	144.	711.	13.7
.2	58.4	-.0	-6.1	28.9	140.	0.	12.9
.2	57.6	2.0	1.2	31.2	424.	1422.	14.5
.2	58.2	4.0	7.1	30.9	653.	1422.	15.4
.2	58.6	6.0	13.6	30.6	848.	1422.	16.1
.2	58.7	8.1	21.8	31.7	1061.	1422.	16.1
.2	57.3	10.1	32.0	32.9	1257.	1422.	17.1
.2	57.9	12.1	42.3	35.3	1421.	1422.	17.8
.2	57.2	15.2	62.2	38.8	1600.	1422.	18.7
.3	124.7	12.1	41.5	34.0	1450.	1422.	17.5
.3	124.9	10.1	31.4	31.9	1265.	1422.	16.9
.3	124.9	8.1	21.0	30.9	1070.	1422.	16.2
.3	126.6	6.0	13.5	30.4	876.	1422.	15.4
.3	126.7	4.0	6.6	30.5	664.	1422.	14.9
.3	126.2	2.0	-.0	30.7	421.	1422.	14.7
.3	126.1	-.0	-6.7	31.3	165.	1422.	14.3
.3	126.2	-2.0	-14.3	31.7	-49.	1422.	14.7
.3	127.1	-4.0	-22.7	32.7	-232.	1422.	14.9
.3	125.6	-6.1	-33.5	34.8	-368.	1422.	14.9
.3	126.2	-8.1	-45.4	36.5	-471.	1422.	15.9
.3	126.8	-10.1	-58.4	39.5	-533.	1422.	16.9
.3	126.0	-12.2	-73.0	43.2	-576.	1422.	17.2
.4	213.8	-8.1	-44.8	37.8	-491.	1422.	17.3
.4	213.5	-6.1	-33.5	35.5	-375.	1422.	16.6
.4	213.0	-4.1	-23.2	34.0	-229.	1422.	16.4
.4	213.2	-2.0	-14.3	32.7	-49.	1422.	15.9
.4	214.3	-.0	-6.6	31.8	171.	1422.	15.8
.4	213.7	-.0	-6.7	31.5	176.	711.	15.4
.4	213.1	-.0	-7.4	30.0	172.	0.	14.2
.4	211.4	2.0	-.1	31.2	424.	1422.	15.7
.4	212.0	4.0	6.7	31.0	681.	1422.	16.0
.4	212.2	6.1	14.1	31.1	906.	1422.	16.2
.4	214.1	8.1	21.8	31.6	1104.	1422.	16.5
.5	311.7	6.0	15.2	33.4	956.	1422.	17.1
.5	314.7	4.0	7.9	32.9	694.	1422.	16.8
.5	314.0	3.0	4.3	33.2	566.	1422.	17.1
.5	314.1	2.0	.8	33.4	433.	1422.	16.8
.5	314.9	-.0	-6.2	33.9	185.	1422.	16.8
.5	313.7	-2.1	-14.5	34.9	-51.	1422.	16.9
.5	315.6	-3.0	-18.0	35.4	-140.	1422.	17.3
.5	313.5	-4.0	-22.9	36.4	-235.	1422.	17.5
.5	313.6	-.1	-32.7	38.6	-1456.	1422.	17.8
.6	423.4	-4.0	-21.0	41.9	-287.	1422.	19.6
.6	422.2	-3.0	-16.3	40.5	-184.	1422.	19.2
.6	420.3	-2.0	-12.3	39.5	-68.	1422.	18.9
.6	422.8	-1.0	-8.1	38.9	45.	1422.	19.0
.6	423.0	-.0	-4.3	38.2	166.	1422.	18.9
.6	423.6	-.0	-4.4	38.2	159.	711.	18.8
.6	422.7	-.0	-5.9	37.9	164.	0.	18.3
.6	421.0	1.0	-.7	38.4	291.	1422.	19.0
.6	422.0	2.0	3.1	38.2	426.	1422.	18.8
.6	420.9	.0	6.6	37.2	825.	1422.	18.7
.6	421.6	4.0	9.6	36.7	692.	1422.	19.0
.6	419.7	3.0	6.1	37.2	558.	1422.	18.8

TABLE XIV. DATA SUMMARY FOR CONFIGURATION FF_I

TEST CONDITIONS			TUNNEL BALANCE DATA			ROTOR DATA	
M	q, PSF	α, DEG	L/q, FT^2	f, FT^2	PM/q, FT^3	N, RPM	f_{RH}, FT^2
.2	58.6	-15.2	-104.2	48.2	-1059.	1422.	18.2
.2	58.1	-12.2	-86.3	38.3	-774.	1422.	15.2
.2	59.2	-10.2	-66.6	32.9	-646.	1422.	14.2
.2	58.3	-8.1	-53.6	31.3	-581.	1422.	12.3
.2	58.6	-6.2	-39.3	28.7	-450.	1422.	11.4
.2	59.1	-4.1	-26.[illegible]	27.7	-301.	1422.	10.7
.2	58.3	-2.0	-14.6	26.2	-110.	1422.	9.4
.2	59.0	-.0	-6.0	25.6	82.	1422.	9.1
.2	59.8	-.0	-5.5	24.8	99.	711.	8.4
.2	58.6	-.0	-5.4	24.2	95.	0.	7.6
.2	59.1	2.0	4.3	25.2	324.	1422.	9.2
.2	58.7	4.0	14.3	24.5	572.	1422.	9.7
.2	58.7	6.1	23.8	24.8	773.	1422.	9.8
.2	58.7	8.1	33.9	26.0	946.	1422.	11.5
.2	59.7	10.1	45.8	27.6	1139.	1422.	11.8
.2	59.0	12.2	60.1	30.5	1281.	1422.	13.6
.2	59.3	14.6	78.8	34.9	1495.	1422.	15.4
.3	126.0	12.2	60.9	29.7	1330.	1422.	14.1
.3	127.0	10.1	46.7	27.4	1159.	1422.	11.5
.3	129.6	8.1	34.2	26.0	1007.	1422.	10.7
.3	127.1	6.1	23.4	24.7	795.	1422.	10.0
.3	127.7	4.0	13.6	24.5	607.	1422.	9.4
.3	134.2	4.0	-	-	-	1422.	9.4
.3	126.5	4.0	13.4	24.5	586.	1422.	9.4
.3	127.0	2.0	4.3	24.4	356.	1422.	9.5
.3	126.9	-.0	-5.0	25.2	120.	1422.	8.8
.3	127.5	-2.0	-15.6	25.5	-113.	1422.	9.2
.3	127.2	-4.1	-25.9	26.9	-294.	1422.	[illegible]
.3	127.8	-6.1	-38.5	28.0	-454.	1422.	[illegible]
.3	129.4	-6.1	-38.4	27.8	-451.	1422.	9.9
.3	128.1	-8.1	-52.0	29.9	-597.	1422.	11.2
.3	127.9	-10.2	-66.1	32.4	-686.	1422.	12.3
.3	127.0	-12.2	-82.9	36.4	-782.	1422.	13.3
.4	214.5	-8.1	-52.8	30.6	-612.	1422.	11.1
.4	214.5	-6.1	-38.1	28.5	-459.	1422.	10.5
.4	213.5	-4.1	-26.1	27.3	-290.	1422.	10.0
.4	215.0	-2.0	-15.1	25.8	-92.	1422.	9.6
.4	212.5	-.0	-5.0	25.3	122.	1422.	9.3
.4	210.8	-.0	-3.8	24.9	117.	711.	9.1
.4	214.1	-.0	-2.0	25.1	119.	0.	9.1
.4	213.9	2.0	4.8	24.9	375.	1422.	9.5
.4	215.7	4.0	13.4	24.3	609.	1422.	9.7
.4	214.5	6.1	24.0	24.8	846.	1422.	10.4
.4	213.8	8.1	35.0	25.8	1036.	1422.	11.4
.5	313.0	6.1	28.7	28.4	894.	1422.	12.9
.5	315.2	4.1	19.1	27.5	633.	1422.	12.1
.5	314.5	3.0	14.3	27.8	501.	1422.	12.0
.5	314.3	2.0	9.7	27.4	390.	1422.	11.8
.5	313.8	.0	-.9	27.9	132.	1422.	11.2
.5	315.6	-2.0	-11.5	28.6	-104.	1422.	11.1
.5	315.3	-3.0	-17.8	29.0	-212.	1422.	11.4
.5	315.4	-4.0	-23.1	30.1	-323.	1422.	11.3
.5	315.5	-6.1	-34.4	31.7	-498.	1422.	11.8
.6	421.4	-4.0	-17.1	35.5	-376.	1422.	13.[illegible]
.6	420.8	-3.0	-11.8	34.4	-253.	1422.	13.8
.6	422.1	-2.0	-5.2	34.2	-129.	1422.	13.9
.6	421.5	-1.0	-.1	33.5	0.	1422.	14.1
.6	420.1	.0	5.3	33.3	130.	1422.	14.2
.6	421.6	.0	6.2	33.0	127.	711.	14.2
.6	422.9	.0	8.3	33.8	191.	0.	14.0
.6	422.1	1.0	10.4	32.7	253.	1422.	14.7
.6	421.2	2.0	15.4	32.7	390.	1422.	15.2
.6	421.9	3.1	21.5	32.9	512.	1422.	15.6
.6	421.3	4.1	25.8	33.0	632.	1422.	16.2

TABLE XV. DATA SUMMARY FOR CONFIGURATION FP_1H_2

TEST CONDITIONS			TUNNEL BALANCE DATA			ROTOR DATA	
M		α, DEG	L/q, FT²	f, FT²	PM/q, FT³	N, RPM	f_{RH}, FT²
.2	[illegible]	-.0	-22.2	33.5	538.	1422.	13.6
.2	[illegible]	2.0	-16.4	33.0	817.	1422.	13.9
.2	[illegible]	4.0	-9.2	32.5	960.	1422.	13.1
.2	58.9	6.0	-1.5	33.4	1093.	1422.	13.0
.2	59.3	8.0	7.4	33.5	1188.	1422.	13.1
.2	58.5	10.1	18.5	35.6	1295.	1422.	13.6
.2	60.9	12.1	29.3	37.0	1337.	1422.	14.2
.2	58.1	14.6	49.1	43.9	1547.	1422.	14.9
.2	58.7	-.0	-22.1	33.1	330.	1422.	13.7
.2	58.9	-.0	-22.5	33.0	554.	711.	13.6
.2	58.9	-.0	-21.3	32.1	528.	0.	12.9
.2	58.6	-2.1	-25.3	33.9	223.	1422.	13.7
.2	59.8	-4.1	-37.4	34.6	266.	1422.	16.2
.2	58.2	-6.1	-53.5	38.2	272.	1422.	16.2
.2	59.4	-8.1	-58.6	37.8	187.	1422.	15.9
.2	59.0	-10.2	-72.3	41.8	101.	1422.	16.9
.2	58.3	-12.2	-81.6	47.0	-38.	1422.	17.8
.2	60.0	-15.2	-94.3	56.5	-453.	1422.	13.7
.2	58.6	-.1	-22.5	33.2	554.	1422.	13.0
.3	126.8	-.0	-20.1	33.8	499.	1422.	14.7
.3	128.0	2.0	-17.0	32.7	813.	1422.	14.3
.3	126.6	4.0	-9.5	32.8	1003.	1422.	14.1
.3	126.9	6.0	-2.3	32.7	1118.	1422.	14.2
.3	126.0	8.0	7.1	33.4	1239.	1422.	14.0
.3	125.0	10.0	17.7	35.5	1362.	1422.	16.6
.3	124.9	12.1	29.1	37.2	1439.	1422.	13.7
.3	125.7	-.1	-22.1	34.0	569.	1422.	14.7
.3	125.0	-.1	-22.2	33.3	567.	711.	14.4
.3	124.5	-.1	-20.3	32.6	501.	0.	13.7
.3	127.1	-2.1	-24.9	33.8	221.	1422.	15.9
.3	126.7	-4.1	-33.8	34.9	210.	1422.	16.9
.3	125.5	-6.1	-50.9	37.0	283.	1422.	17.0
.3	126.2	-8.1	-60.5	38.9	194.	1422.	17.6
.3	125.9	-10.2	-72.2	42.0	95.	1422.	18.7
.3	125.9	-12.2	-80.2	46.2	-81.	1422.	19.2
.3	126.7	-.0	-21.5	33.2	555.	1422.	15.8
.4	214.6	-.0	-8.3	34.1	285.	1422.	16.2
.4	212.9	-.0	-8.6	34.5	292.	1422.	16.0
.4	214.2	2.0	-7.4	34.0	125.	1422.	16.0
.4	215.6	4.0	-5.6	33.5	-81.	1422.	16.0
.4	213.8	6.0	-3.2	33.6	-278.	1422.	15.7
.4	212.1	8.0	-.4	35.1	-468.	1422.	15.8
.4	215.7	-.0	-8.7	34.3	301.	1422.	16.4
.4	214.7	-.0	-8.9	34.3	304.	711.	16.0
.4	215.2	-.0	-8.3	33.9	286.	0.	15.8
.4	215.3	-2.0	-9.7	34.7	485.	1422.	16.5
.4	215.4	-4.0	-11.4	36.0	711.	1422.	16.6
.4	215.1	-6.0	-16.7	38.3	1059.	1422.	17.3
.4	214.4	-8.0	-20.5	41.6	1395.	1422.	17.3
.4	214.9	-.0	-9.7	34.3	296.	1422.	16.2
.5	315.6	-.0	-6.2	36.7	222.	1422.	16.8
.5	315.3	2.0	-5.4	36.0	144.	1422.	16.6
.5	315.6	3.0	-5.0	35.8	123.	1422.	16.6
.5	314.7	4.0	-4.7	35.9	81.	1422.	16.5
.5	316.2	6.0	-3.2	35.7	9.	1422.	16.6
.5	314.7	-.0	-6.3	36.6	221.	1422.	16.8
.5	316.5	-.0	-6.3	36.1	220.	711.	16.7
.5	314.5	-.0	-6.3	34.2	216.	0.	14.8
.5	315.5	-2.0	-8.0	37.3	333.	1422.	17.1
.5	315.6	-3.0	-9.1	37.9	405.	1422.	17.4
.5	315.6	-4.0	-10.5	38.6	476.	1422.	17.4
.5	312.9	-6.0	-13.2	40.6	656.	1422.	17.7
.5	313.7	-.0	-6.5	36.7	229.	1422.	16.8
.6	423.1	-.0	-5.4	41.5	211.	1422.	17.9
.6	423.0	1.0	-4.9	41.4	187.	1422.	18.0
.6	423.9	2.0	-4.0	40.9	167.	1422.	17.9
.6	423.8	3.0	-3.3	40.5	150.	1422.	17.8
.6	422.8	4.0	-2.5	40.1	135.	1422.	17.8
.6	424.2	-.0	-5.3	41.8	204.	1422.	18.1
.6	423.6	-.0	-5.2	41.6	203.	711.	17.9
.6	424.3	-.0	-4.0	40.7	172.	0.	16.7
.6	423.8	-2.0	-7.0	42.9	263.	1422.	18.5
.6	423.2	-1.0	-6.1	42.3	227.	1422.	18.5
.6	424.2	-3.0	-8.1	43.2	294.	1422.	18.8
.6	422.3	-4.0	-9.2	44.4	333.	1422.	18.9
.6	424.6	-.0	-4.8	41.6	191.	1422.	18.6

TABLE XVI. DATA SUMMARY FOR CONFIGURATION FP_1F_R

TEST CONDITIONS			TUNNEL BALANCE DATA			ROTOR DATA	
M	q, PSF	α, DEG	L/q, FT²	f, FT²	PM/q, FT³	N, RPM	f_{RH}, FT²
.2	58.9	-.0	-2.8	29.1	153.	1422.	12.1
.2	59.0	2.0	-4.0	29.5	660.	1422.	13.1
.2	58.4	4.0	1.4	28.8	872.	1422.	13.3
.2	59.1	6.0	11.3	29.8	1030.	1422.	14.1
.2	58.7	8.1	19.9	30.9	1132.	1422.	15.8
.2	58.[illegible]	10.1	31.7	32.2	1266.	1422.	17.2
.2	57.[illegible]	12.1	42.2	35.2	1329.	1422.	17.2
.2	59.8	14.7	59.1	38.2	1388.	1422.	19.8
.2	59.3	-.0	-2.8	29.5	151.	1422.	11.4
.2	58.8	-.0	-4.3	28.5	143.	711.	10.5
.2	59.5	-.0	-3.6	26.6	142.	0.	8.3
.2	58.3	-2.0	-9.3	30.4	-70.	1422.	10.6
.2	59.9	-4.0	-18.0	30.8	-194.	1422.	10.9
.2	59.7	-6.1	-28.5	31.7	-269.	1422.	11.7
.2	57.8	-8.1	-52.6	34.7	132.	1422.	11.0
.2	57.1	-10.2	-65.5	37.8	43.	1422.	10.1
.2	50.1	-12.2	-77.6	41.7	-61.	1422.	10.3
.2	57.5	-15.2	-94.2	52.6	-343.	1422.	10.1
.2	57.3	-.0	-2.6	30.3	147.	1422.	11.4
.3	124.6	-.0	-4.1	29.9	145.	1422.	9.9
.3	125.7	2.0	-5.6	29.1	678.	1422.	10.7
.3	125.5	4.0	-.3	28.7	881.	1422.	10.9
.3	125.9	6.0	9.5	29.2	1036.	1422.	11.8
.3	126.2	8.0	17.4	30.6	1158.	1422.	12.7
.3	126.1	10.1	28.3	32.1	1279.	1422.	13.4
.3	125.6	12.1	41.9	35.9	1363.	1422.	14.9
.3	126.2	-.0	-4.3	29.5	134.	1422.	10.2
.3	127.0	-.0	-4.9	28.3	162.	711.	9.9
.3	126.3	-.0	-6.4	28.9	146.	0.	9.5
.3	127.0	-2.0	-11.3	29.3	-48.	1422.	9.6
.3	126.1	-4.0	-19.4	30.7	-202.	1422.	9.3
.3	124.1	-6.1	-29.3	32.1	-285.	1422.	9.1
.3	125.4	-8.1	-42.3	33.6	-331.	1422.	9.4
.3	126.9	-10.1	-65.9	36.9	34.	1422.	9.4
.3	128.3	-12.2	-79.3	-	-	1422.	9.6
.3	125.6	-.0	-3.3	29.2	167.	1422.	9.9
.3	126.1	-12.2	-77.5	41.4	-62.	1422.	9.6
.4	213.6	-.0	-4.6	31.3	155.	1422.	10.0
.4	213.6	2.0	1.6	31.6	421.	1422.	10.5
.4	213.6	4.0	.5	30.5	866.	1422.	11.1
.4	214.3	6.0	7.2	30.9	1085.	1422.	11.9
.4	213.7	8.0	15.9	32.3	1231.	1422.	12.5
.4	214.3	.0	-4.2	31.2	149.	1422.	10.2
.4	214.3	2.0	.4	30.7	430.	1422.	10.6
.4	214.1	-.0	-5.2	30.9	151.	711.	10.2
.4	214.0	-.0	-4.7	34.0	183.	0.	11.8
.4	213.6	-2.0	-12.1	31.3	-54.	1422.	9.7
.4	214.2	-4.0	-20.4	31.8	-210.	1422.	9.6
.4	213.7	-6.1	-30.6	33.7	-313.	1422.	9.4
.4	215.0	-8.1	-42.2	35.1	-390.	1422.	9.3
.4	214.9	-.0	-5.2	30.6	140.	1422.	10.2
.5	314.5	-.0	-4.1	34.2	135.	1422.	10.9
.5	313.7	2.0	2.5	33.8	370.	1422.	11.4
.5	313.8	3.0	5.8	33.9	502.	1422.	11.6
.5	31[illegible].5	4.0	8.5	34.2	643.	1422.	12.0
.5	315.4	6.0	13.3	33.9	914.	1422.	12.7
.5	314.8	.0	-4.4	33.4	133.	1422.	10.9
.5	313.7	.0	-4.4	33.5	143.	711.	10.8
.5	314.2	-.0	-4.7	32.7	160.	0.	10.5
.5	314.7	-2.0	-11.9	33.7	-63.	1422.	10.4
.5	315.3	-3.0	-15.3	34.0	-155.	1422.	10.3
.5	314.3	-4.0	-20.2	34.4	-237.	1422.	10.0
.5	314.0	-6.1	-29.4	36.3	-366.	1422.	9.9
.5	313.1	-.0	-3.6	33.8	142.	1422.	10.9
.6	423.2	.0	-1.8	40.0	115.	1422.	12.6
.6	423.4	1.0	1.6	39.6	241.	1422.	13.0
.6	422.2	2.0	4.7	39.4	352.	1422.	13.3
.6	422.7	3.0	8.3	40.2	465.	1422.	13.8
.6	421.5	4.0	11.7	39.9	588.	1422.	14.0
.6	422.4	.0	-1.7	39.9	111.	1422.	12.7
.6	422.5	-.0	-2.6	39.2	121.	711.	12.3
.6	422.3	-.0	-3.2	37.7	105.	0.	9.1
.6	424.5	-1.0	-5.1	40.4	7.	1422.	12.2
.6	423.0	-2.0	-9.7	40.6	-108.	1422.	12.1
.6	422.1	-3.0	-13.5	41.4	-207.	1422.	11.9
.6	422.6	-4.0	-17.3	42.0	-310.	1422.	11.7
.6	422.2	.0	-1.8	39.9	104.	1422.	12.6

TABLE XVII. DATA SUMMARY FOR CONFIGURATION FP_2BLCH_3

TEST CONDITIONS			TUNNEL BALANCE DATA			ROTOR DATA	
M	q, PSF	α, DEG	L/q, FT^2	f, FT^2	PM/q, FT^3	N, RPM	f_{RH}, FT^2
.2	58.2	-.0	-15.8	34.9	497.	1422.	14.3
.2	57.8	2.0	-12.3	35.5	839.	1422.	14.6
.2	58.9	4.0	-5.7	34.9	985.	1422.	15.2
.2	58.5	6.0	2.3	35.6	1136.	1422.	14.6
.2	58.8	8.0	10.6	36.0	1226.	1422.	14.9
.2	56.8	-.0	-16.2	35.7	563.	1422.	14.3
.2	58.9	-.0	-17.4	35.1	547.	711.	15.0
.2	58.3	-.0	-17.3	36.6	539.	0.	15.8
.2	59.0	-2.0	-18.2	35.2	187.	1422.	14.8
.2	59.8	-4.1	-25.0	35.0	52.	1422.	15.9
.2	58.5	-6.1	-45.7	33.1	270.	1422.	16.3
.2	59.5	-8.1	-54.9	38.5	175.	1422.	17.5
.2	59.3	-.0	-16.6	34.0	485.	1422.	12.8
.4	211.9	-.0	-14.8	37.8	355.	1422.	15.7
.4	213.0	2.0	-12.0	37.5	701.	1422.	15.7
.4	211.2	4.0	-9.3	37.5	1020.	1422.	15.4
.4	211.2	6.0	-1.8	37.5	1200.	1422.	15.5
.4	211.8	-.0	-13.7	38.1	336.	1422.	15.6
.4	212.4	-.0	-14.6	37.4	372.	711.	15.4
.4	211.7	-.0	-14.7	39.9	360.	0.	17.1
.4	211.5	-2.0	-20.2	38.7	104.	1422.	15.8
.4	212.9	-4.1	-27.6	38.8	-61.	1422.	16.0
.4	212.4	-6.1	-38.8	39.7	-94.	1422.	16.1
.4	211.8	-.0	-14.5	37.9	368.	1422.	15.6
.6	417.5	-.0	-8.0	45.6	154.	1422.	17.1
.6	417.8	2.0	-2.8	45.4	420.	1422.	16.9
.6	416.9	4.0	3.1	45.6	679.	1422.	16.7
.6	416.3	-.0	-8.4	45.9	212.	1422.	17.1
.6	418.1	-.0	-9.0	45.3	189.	711.	16.7
.6	416.0	-.0	-8.3	46.4	173.	0.	17.4
.6	416.0	-2.0	-15.4	46.7	-41.	1422.	17.2
.6	416.7	-4.0	-22.3	47.9	-271.	1422.	17.4
.6	416.7	-.0	-8.4	46.0	199.	1422.	17.0

TABLE XVIII. DATA SUMMARY FOR CONFIGURATION FP_2BLCF_f.										
TEST CONDITIONS				TUNNEL BALANCE DATA					ROTOR DATA	
M	q,PSF	α,DEG	f_μ,FT²	L/q,FT²	D_{BAL}/q,FT²	D_{EXT}/q,FT²	D_{EQ}/q,FT²	PM/q,FT³	N,RPM	f_{RH},FT²
.2	57.8	2.1	.0	40.4	37.0	37.0	37.0	-292.	1422	12.3
.2	57.0	4.1	.0	45.7	37.0	37.0	37.0	-70.	1422	15.6
.2	58.1	6.1	.0	50.5	37.4	37.4	37.1	172.	1422	16.5
.2	57.0	8.2	.0	58.8	37.3	37.3	37.3	472.	1422	16.8
.2	57.2	.1	.0	31.3	37.7	37.7	37.7	-594.	1422	13.8
.2	57.6	.1	.0	30.6	37.3	37.3	37.3	-626.	711	13.8
.2	57.7	.1	.0	29.2	34.8	34.6	34.6	-558.	0	13.7
.2	57.8	-1.9	.0	25.0	36.4	36.4	36.4	-766.	1422	12.1
.2	57.5	-4.0	.0	13.3	38.4	38.4	38.4	-922.	1422	15.[illegible]
.2	57.1	-6.0	.0	-.7	38.8	38.8	38.8	-949.	1422	16.[illegible]
.2	57.5	-8.0	.0	-15.1	39.2	39.2	39.2	-910.	1422	17.5
.2	57.6	.1	0	30.6	37.6	37.6	37.6	-616.	1422	13.9
.2	57.9	.0	5.6	-1.2	17.4	19.5	34.4	-434.	711	3.9
.2	58.3	.0	5.5	-1.9	15.6	17.7	32.6	-444.	0	1.4
.2	57.9	2.0	5.5	9.8	16.2	20.2	35.1	-193.	1422	5.1
.2	57.0	4.1	5.6	18.2	16.3	20.4	35.3	75.	1422	4.3
.2	56.7	6.1	5.6	27.6	18.4	20.4	35.4	314.	1422	4.9
.2	56.9	8.1	5.5	37.1	19.5	21.6	36.5	551.	1422	5.
.2	57.2	.0	5.6	.4	18.9	21.0	35.9	-425.	1422	4.6
.2	56.7	-2.0	5.6	-9.3	19.9	22.0	36.9	-643.	1422	4.8
.2	57.2	-3.9	5.6	-20.3	19.9	22.0	36.9	-765.	1422	5.7
.2	57.5	-6.1	5.6	-34.2	21.8	23.9	38.8	-857.	1422	9.7
.2	57.2	-8.1	5.5	-48.4	24.2	26.3	41.2	-884.	1422	15.4
.2	57.2	.0	5.6	1.0	19.2	21.3	36.2	-413.	1422	4.8
.2	57.2	-.0	20.9	-3.4	7.6	11.4	104.7	-537.	1422	5.3
.2	57.6	-.0	20.9	-4.2	5.3	9.1	102.4	-540.	711	3.6
.2	57.3	-.0	20.9	-7.9	5.0	8.8	102.1	-522.	0	3.0
.2	56.9	-2.0	20.9	-13.0	7.7	11.5	104.8	-742.	1422	6.9
.2	57.5	-4.1	20.9	-24.0	8.2	12.0	105.3	-876.	1422	7.6
.2	57.7	-6.1	20.9	-38.7	9.7	13.5	106.8	-953.	1422	8.5
.2	57.4	-8.0	20.9	-52.8	11.8	15.6	108.9	-994.	1422	9.3
.2	57.0	-10.2	20.9	-69.8	15.2	19.0	112.3	-1025.	1422	12.5
.2	56.9	-12.2	20.9	-86.7	19.1	22.9	116.3	-1083.	1422	15.3
.2	56.8	-15.3	20.9	-109.7	27.2	30.9	124.3	-1142.	1422	20.2
.3	122.3	.0	9.0	-11.7	15.0	17.6	50.8	58.	1422	5.1
.3	123.0	2.0	9.0	-2.1	14.5	17.1	50.3	281.	1422	4.9
.3	124.4	4.0	9.0	6.9	14.2	16.9	50.1	520.	1422	5.1
.3	122.6	6.0	9.0	16.2	14.7	17.4	50.6	757.	1422	5.3
.3	122.1	8.1	9.0	27.3	16.2	18.8	52.0	997.	1422	5.6
.3	123.6	.0	9.0	-11.3	14.7	17.4	50.6	[illegible]	1422	5.[illegible]
.3	125.0	-2.0	9.0	-21.1	15.2	17.8	51.0	-124.	1422	6.1
.3	123.9	-4.1	9.0	-33.4	16.5	19.2	52.4	-287.	1422	7.7
.3	123.6	-6.1	9.0	-47.1	18.1	20.7	53.9	-382.	1422	9.2
.3	123.1	-8.2	9.0	-62.3	20.3	22.9	56.1	-442.	1422	10.8
.3	123.4	.0	9.0	-11.1	14.9	17.5	50.7	[illegible]	1422	5.[illegible]
.41	221.6	.1	.0	30.8	42.5	42.5	42.5	-170.	1422	7.8
.4	209.6	.1	.0	32.6	42.7	42.7	42.7	-118.	1422	15.2
.4	20[illegible].9	2.1	.0	39.4	42.6	42.6	42.6	194.	1422	19.4
.4	209.8	4.1	.0	46.5	43.5	43.5	43.5	397.	1422	20.4
.4	210.6	6.1	.0	52.2	43.0	43.0	43.0	644.	1422	22.0
.4	209.4	.1	.0	31.7	42.5	42.5	42.5	-122.	1422	18.3
.4	209.6	.1	.0	32.7	42.2	42.2	42.2	-135	711	19.2
.4	209.1	.1	.0	30.2	42.7	42.7	42.7	-124.	0	18.2
.4	208.3	-1.9	.0	24.9	42.9	42.9	42.9	-312.	1422	17.[illegible]

TABLE XVIII - CONCLUDED

TEST CONDITIONS				TUNNEL BALANCE DATA					ROTOR DATA	
M	q,PSF	α,DEG	f_{μ},FT^2	L/q,FT^2	D_{BAL}/q,FT^2	D_{EXT}/q,FT^2	D_{EQ} /q,FT^2	PM/q,FT^3	N,RPM	f_{RH},FT^2
.4	210.0	-4.0	.0	13.4	42.3	42.3	42.3	-426.	1422	16.9
.4	209.6	-5.9	.0	-.9	42.2	42.2	42.2	-459.	1422	16.6
.4	209.1	.1	.0	32.1	42.5	42.5	42.5	-214.	1422	18.2
.4	207.1	.0	8.8	-10.6	15.8	18.7	49.4	94.	1422	5.4
.4	208.6	2.0	8.8	-1.1	15.2	18.1	49.0	335.	1422	5.0
.4	207.8	4.0	8.8	7.2	14.9	17.8	48.7	566.	1422	5.0
.4	208.3	6.0	8.8	17.4	15.4	18.3	49.2	770.	1422	5.0
.4	208.7	.0	8.8	-10.5	16.0	18.9	49.8	104.	1422	5.6
.4	208.7	.0	8.8	-12.3	14.8	17.7	48.4	99.	711	4.9
.4	209.9	.0	8.8	-14.0	14.4	17.4	48.3	94.	0	4.5
.4	209.5	-2.0	8.8	-21.7	16.3	19.3	50.1	-109.	1422	6.0
.4	209.1	-4.1	8.8	-33.6	17.8	20.7	51.6	-205.	1422	7.0
.4	206.7	-6.1	8.8	-48.4	19.7	22.6	53.5	-381.	1422	7.9
.4	207.7	.0	8.8	-11.3	16.0	19.0	49.8	91.	1422	5.4
.41	222.0	.0	8.1	-6.8	17.7	20.5	48.4	113.	1422	8.5
.41	222.1	.0	9.9	-8.8	16.3	19.6	55.6	86.	1422	7.8
.41	222.7	.0	11.7	-9.7	15.2	18.8	63.5	73.	1422	7.6
.5	309.4	.1	.0	34.8	45.3	45.3	45.3	-125.	1422	19.2
.5	310.4	2.1	.0	42.1	45.6	45.6	45.6	137.	1422	20.3
.5	310.9	4.1	.0	48.5	45.5	45.5	45.5	406.	1422	21.2
.5	310.0	.1	.0	34.6	45.2	45.2	45.2	-126.	1422	19.2
.5	310.8	.1	.0	35.1	44.9	44.9	44.9	-117.	711	19.2
.5	309.6	.1	.0	35.9	45.1	45.1	45.1	-126.	0	18.9
.5	310.5	-1.9	.0	26.4	44.6	44.6	44.6	-334.	1422	18.4
.5	310.1	-4.0	.0	15.8	44.5	44.5	44.5	-464.	1422	17.6
.5	311.8	.1	.0	34.6	44.8	44.8	44.8	-122.	1422	19.2
.6	417.4	.1	.0	38.2	49.9	49.9	49.9	-138.	1422	20.3
.6	413.6	.1	.1	26.3	43.3	44.2	44.2	-41.	1422	16.5
.6	413.3	.1	2.1	23.7	40.7	42.2	47.1	-65.	1422	15.7
.6	414.3	.0	3.8	14.9	35.9	38.1	48.3	-69.	1422	14.7
.6	413.5	.1	5.5	21.8	35.7	38.5	55.0	-179.	1422	16.8
.6	415.4	2.1	5.5	29.8	35.2	38.1	[illegible]	174.	1422	17.7
.6	414.5	4.1	5.5	39.5	37.0	39.8	56.3	-13.	1422	18.7
.6	414.2	.1	5.5	22.8	35.9	38.8	55.3	-106.	1422	16.9
.6	414.0	-2.0	5.5	13.3	36.2	39.0	[illegible]	[illegible]	1422	16.3
.6	414.0	-4.0	5.5	3.1	[illegible]	39.5	[illegible]	[illegible]	1422	15.9

TABLE XIX. DATA SUMMARY FOR CONFIGURATION W

TEST CONDITIONS			TUNNEL BALANCE DATA		
M	q, PSF	α, DEG	L/q, FT²	f, FT²	PM/q, FT³
.6	417.6	-10.4	57.9	4.3	-307.
.6	416.0	-8.2	138.6	5.8	-276.
.6	418.7	-6.1	211.7	9.2	-216.
.6	420.7	-3.8	295.5	15.2	-124.
.6	420.3	-1.6	371.6	23.3	-25.
.6	421.1	.8	446.5	33.6	154.
.6	419.1	2.9	514.7	49.3	1846.
.6	420.0	.7	447.5	33.3	150.
.5	314.2	-10.5	-6.5	3.4	4352.
.5	314.6	-8.2	127.7	4.9	-255.
.5	311.9	-6.0	203.9	8.5	-208.
.5	312.8	-3.8	277.2	13.8	-144.
.5	312.6	-1.7	346.2	20.6	-44.
.5	213.5	.5	413.0	29.1	58.
.5	315.2	2.8	475.4	39.4	211.
.5	315.0	4.8	506.2	48.9	486.
.5	314.9	5.9	514.0	56.1	1105.
.5	314.3	.6	416.2	29.5	73.
.4	214.0	-10.4	50.8	3.4	-269.
.4	214.3	-8.2	120.5	4.7	-247.
.4	213.4	-6.0	191.6	7.9	-205.
.4	213.1	-3.9	263.6	12.6	-139.
.4	212.5	-1.7	329.7	19.0	-64.
.4	213.3	.4	394.1	27.0	31.
.4	213.4	2.8	461.8	36.6	156.
.4	213.7	4.8	509.6	46.2	246.
.4	214.8	7.0	528.6	58.0	297.
.4	213.5	.6	399.3	27.6	47.
.3	125.9	.6	385.8	26.2	13.
.3	124.6	-12.5	-17.8	3.7	-266.
.3	124.2	-10.4	49.5	3.2	-269.
.3	124.6	-8.2	117.8	4.5	-243.
.3	125.0	-6.0	189.4	7.8	-202.
.3	125.1	-3.9	255.1	12.1	-146.
.3	125.9	-1.7	320.4	18.1	-89.
.3	125.5	.0	-	-	-
.3	125.3	2.8	447.9	34.9	126.
.3	125.5	4.9	501.4	44.6	214.
.3	125.2	7.0	542.2	55.0	293.
.3	126.0	9.0	563.7	67.8	260.
.3	125.2	.6	389.5	26.5	30.
.2	57.1	.6	385.5	26.0	35.
.2	57.0	-15.8	-118.0	7.9	-208.
.2	57.5	-12.5	-19.7	4.1	-250.
.2	57.2	-10.4	48.4	3.6	-246.
.2	57.6	-8.2	118.8	4.8	-231.
.2	57.5	-6.1	184.4	7.6	-201.
.2	57.4	-3.9	254.3	12.1	-143.
.2	57.4	-1.7	318.4	18.1	-80.
.2	57.6	.5	375.0	25.2	-15.
.2	57.8	2.7	435.1	33.8	90.
.2	57.6	4.8	487.1	42.7	184.
.2	57.7	6.9	527.6	53.1	249.
.2	57.8	9.1	556.1	66.7	221.
.2	58.3	10.9	522.6	91.1	-69.
.2	57.4	.9	390.2	26.9	56.

TABLE XX. DATA SUMMARY FOR CONFIGURATION FW

TEST CONDITIONS			TUNNEL BALANCE DATA		
M	q, PSF	α, DEG	L/q, FT^2	f, FT^2	PM/q, FT^3
.2	57.6	.8	330.9	36.9	137.
.2	56.8	-1.7	254.5	30.3	-125.
.2	56.5	-3.6	187.3	26.9	-181.
.2	57.4	-5.8	88.8	23.2	-129.
.2	57.8	-7.9	9.4	23.5	-305.
.2	57.4	-10.3	-72.8	31.3	-661.
.2	58.6	.7	322.3	35.8	105.
.2	58.7	2.9	393.5	44.3	450.
.2	58.6	5.1	456.6	53.5	845.
.2	57.9	7.2	530.2	67.0	1138.
.2	57.6	1.4	585.9	82.0	3489.
.2	58.3	9.3	572.2	79.9	1267.
.2	58.0	11.4	606.0	103.5	1367.
.2	55.6	.8	338.1	37.3	139.
.3	130.2	.8	332.2	36.9	159.
.3	130.6	-1.4	258.7	29.6	-50.
.3	129.6	-3.6	175.2	24.9	-118.
.3	129.4	-5.9	86.1	23.1	-117.
.3	127.2	-8.1	.6	23.7	-330.
.3	129.1	-10.2	-78.9	26.1	-461.
.3	129.1	-12.5	-158.5	33.6	-718.
.3	128.8	.7	333.1	36.9	128.
.3	129.9	2.8	399.9	44.6	448.
.3	128.8	5.1	474.6	56.1	871.
.3	127.9	7.3	544.6	69.3	1187.
.3	129.1	9.2	575.9	80.9	1291.
.4	218.7	.7	340.7	37.8	151.
.4	217.6	-1.4	269.2	30.7	-68.
.4	217.2	-3.6	184.9	25.8	-214.
.4	217.2	-5.8	93.2	24.1	-158.
.4	217.1	-8.0	8.5	25.6	-444.
.4	217.1	.8	345.7	38.4	168.
.4	216.4	3.0	424.5	47.9	487.
.4	217.9	5.2	489.6	59.1	921.
.4	218.7	7.3	531.7	71.1	1220.
.4	218.7	.8	345.3	38.5	156.
.5	322.5	.9	365.7	41.7	153.
.5	320.0	-1.3	286.1	34.0	-131.
.5	322.0	-2.4	243.5	30.9	-236.
.5	322.7	-3.8	187.6	27.9	-376.
.5	321.4	-4.7	148.6	27.0	-438.
.5	321.2	.9	365.5	41.8	132.
.5	321.2	2.9	435.9	51.0	686.
.5	320.8	.9	365.9	42.0	146.
.5	322.0	3.1	446.5	52.1	514.
.5	321.4	3.9	472.7	57.0	655.
.5	321.2	5.1	507.1	64.1	870.
.5	323.5	6.2	532.7	72.3	1074.
.5	321.1	.9	365.8	41.9	141.
.6	432.3	1.0	421.3	50.8	[illegible]
.6	432.2	-.3	359.9	44.0	-54.
.6	431.5	-1.4	309.9	39.0	[illegible]
.6	431.3	-2.8	252.6	35.0	-400.
.6	432.7	-3.5	221.8	33.7	-501.
.6	433.4	1.0	419.2	50.8	157.
.6	431.6	2.0	452.7	57.0	775.
.6	431.8	3.0	484.5	66.4	1771.
.6	431.1	1.1	422.2	51.1	177.

TABLE XXI. DATA SUMMARY FOR CONFIGURATION FWP_1

TEST CONDITIONS			TUNNEL BALANCE DATA		
M	q, PSF	α, DEG	L/q, FT^2	f, FT^2	PM/q, FT^3
.2	59.9	.8	340.0	39.1	87.
.2	59.3	-1.3	277.4	32.8	-146.
.2	60.0	-3.7	183.3	26.3	-24.
.2	58.3	-5.7	106.2	25.3	-108.
.2	59.1	-7.9	24.0	24.1	-277.
.2	59.4	-10.2	-62.8	26.8	-388.
.2	58.7	-12.3	-139.5	32.5	-559.
.2	59.8	-15.6	-258.5	43.8	-733.
.2	59.5	.8	341.1	38.8	60.
.2	59.5	2.9	408.6	47.5	321.
.2	60.3	5.0	460.4	55.7	725.
.2	59.0	7.2	531.1	69.5	1042.
.2	59.5	9.4	587.3	84.7	1247.
.2	60.3	11.4	620.5	107.3	1237.
.2	60.9	.8	335.8	38.3	64.
.3	129.1	.8	345.4	39.4	84.
.3	128.6	-1.3	274.7	32.1	-45.
.3	130.2	-3.6	184.1	26.7	-92.
.3	129.2	-5.7	103.0	24.5	-70.
.3	128.9	-7.9	18.7	24.2	-277.
.3	128.3	-10.2	-67.2	27.1	-402.
.3	128.9	-12.3	-142.7	32.0	-552.
.3	127.4	.8	351.5	40.4	107.
.3	129.4	3.0	417.6	48.1	462.
.3	130.3	5.2	485.6	59.3	813.
.3	129.3	7.3	544.8	71.5	1131.
.3	129.2	9.4	594.2	87.4	1263.
.3	129.7	[illegible]	344.2	39.0	147.
.4	217.8	.9	360.5	41.5	145.
.4	217.[illegible]	-1.4	282.7	33.5	-71.
.4	217.[illegible]	-3.5	199.5	27.7	-175.
.4	217.[illegible]	-5.8	104.3	25.8	-113.
.4	218.[illegible]	-8.2	13.1	25.7	-364.
.4	217.7	.8	360.7	41.6	129.
.4	220.1	3.1	432.1	50.6	481.
.4	219.7	5.3	496.0	62.0	862.
.4	219.1	[illegible].3	538.1	74.6	1183.
.4	218.4	.8	355.4	41.1	142.
.5	321.0	.9	380.5	45.5	121.
.5	323.1	-1.3	296.7	36.6	-161.
.5	321.5	-2.4	255.0	33.3	-255.
.5	322.3	-3.5	213.4	30.8	-357.
.5	320.2	-5.6	121.7	28.4	-347.
.5	322.8	.9	375.0	44.8	105.
.5	323.2	3.1	453.2	55.8	434.
.5	325.2	4.2	481.5	61.5	677.
.5	323.2	5.3	517.9	69.2	886.
.5	324.0	6.3	545.2	78.6	1066.
.5	323.3	.9	375.9	44.8	132.
.6	433.3	1.0	422.2	56.7	91.
.6	430.0	-.1	377.8	49.7	-33.
.6	430.2	-1.3	324.2	44.0	-215.
.6	431.3	-2.4	278.2	40.0	-351.
.6	432.2	-3.4	233.7	36.8	-483.
.6	431.8	1.0	423.8	56.6	142.
.6	433.3	2.1	458.9	64.8	707.
.6	431.9	3.2	486.1	75.8	1601.
.6	431.8	1.0	422.1	56.7	113.

TABLE XXII. DATA SUMMARY FOR CONFIGURATION FWH_3

TEST CONDITIONS			TUNNEL BALANCE DATA			ROTOR DATA	
M	q, PSF	α, DEG	L/q, FT^2	f, FT^2	PM/q, FT^3	N, RPM	f_{RH}, FT^2
.2	58.7	.8	337.2	64.0	231.	1422.	20.7
.2	57.8	3.0	415.2	75.4	528.	1422.	20.0
.2	57.6	5.1	479.1	98.6	800.	1422.	20.7
.2	59.1	7.3	534.3	99.9	1022.	1422.	21.0
.2	58.1	9.4	587.1	115.7	1238.	1422.	22.2
.2	58.7	.8	340.4	64.5	241.	1422.	20.7
.2	59.1	.9	347.4	65.8	238.	711.	19.8
.2	57.8	.9	344.7	64.3	239.	0.	19.0
.2	57.6	-1.4	276.1	57.2	18.	1422.	19.5
.2	57.5	-3.5	201.6	51.4	-189.	1422.	19.3
.2	57.0	-5.7	115.6	46.1	-337.	1422.	19.0
.2	57.0	-7.9	36.1	44.8	-476.	1422.	20.5
.2	57.7	-10.1	-47.3	46.2	-598.	1422.	20.0
.2	59.0	-12.3	-125.8	49.6	-755.	1422.	19.4
.2	58.0	-15.6	-240.6	59.9	-989.	1422.	17.6
.2	57.9	.9	347.3	66.0	245.	1422.	19.8
.3	127.4	.8	344.3	67.4	183.	1422.	21.4
.3	127.0	3.0	416.0	78.8	438.	1422.	21.6
.3	129.0	5.1	486.1	91.4	696.	1422.	21.9
.3	129.7	7.3	549.6	105.4	943.	1422.	22.0
.3	129.5	9.4	595.7	120.5	1141.	1422.	22.1
.3	128.0	.9	346.2	68.1	191.	1422.	21.4
.3	128.0	.8	345.5	67.1	182.	711.	21.4
.3	129.1	.8	345.7	65.8	166.	0.	20.3
.3	127.9	-3.5	195.5	52.2	-260.	1422.	21.0
.3	127.9	-5.7	112.0	47.5	-411.	1422.	20.7
.3	129.2	-7.9	28.5	45.1	-545.	1422.	20.2
.3	127.0	-10.1	-53.6	46.6	-698.	1422.	19.5
.3	127.2	-12.3	-132.5	50.3	-842.	1422.	20.4
.3	126.1	-15.6	-255.8	61.6	-1112.	1422.	19.9
.3	127.7	-1.4	275.1	59.1	-56.	1422.	21.0
.3	128.1	.9	[illegible]	67.4	178.	1422.	21.4
.4	215.3	.8	352.1	71.5	138.	1422.	21.4
.4	215.3	3.0	428.3	83.2	388.	1422.	21.6
.4	217.1	5.0	482.9	95.1	619.	1422.	21.7
.4	217.1	7.3	535.3	109.1	852.	1422.	21.8
.4	215.0	.8	350.0	71.8	124.	1422.	21.4
.4	215.0	.9	347.5	70.4	136.	711.	21.2
.4	215.9	.8	346.3	71.0	98.	0.	21.6
.4	214.1	-1.4	274.0	61.8	-111.	1422.	21.2
.4	215.1	-3.5	196.4	54.7	-316.	1422.	20.9
.4	215.1	-5.7	112.2	49.5	-470.	1422.	20.6
.4	214.7	-7.9	26.8	48.1	-631.	1422.	20.1
.4	216.6	.9	348.9	70.9	126.	1422.	21.6
.5	319.8	.4	360.4	78.2	85.	1422.	22.5
.5	318.6	3.0	435.1	90.3	340.	1422.	22.5
.5	319.4	4.1	463.5	96.8	465.	1422.	22.5
.5	319.5	5.1	485.7	103.3	576.	1422.	22.6
.5	320.1	6.2	520.2	111.9	797.	1422.	22.8
.5	318.4	.8	361.4	78.4	87.	1422.	22.5
.5	319.0	.9	361.3	78.2	80.	711.	22.2
.5	319.3	.8	357.7	81.0	103.	0.	24.2
.5	318.6	-1.3	293.2	67.5	-158.	1422.	22.1
.5	319.5	-2.4	243.5	63.7	-272.	1422.	22.1
.5	319.6	-3.5	202.8	59.8	-370.	1422.	21.8
.5	319.0	-5.7	117.1	54.6	-554.	1422.	21.5
.5	319.5	.9	362.7	78.5	69.	1422.	22.5
.6	431.1	3.1	455.5	109.3	662.	1422.	24.5
.6	432.3	.9	381.7	92.2	-55.	1422.	23.9
.6	429.3	.9	381.4	92.3	-100.	711.	23.2
.6	428.8	.9	385.1	91.3	-49.	0.	22.7
.6	432.1	-.2	341.4	85.7	-181.	1422.	23.6
.6	429.1	-1.3	302.5	80.3	-269.	1422.	23.4
.6	428.7	-2.4	257.0	74.5	-378.	1422.	23.4
.6	429.1	-3.5	211.2	70.0	-520.	1422.	23.3
.6	432.0	.9	382.5	92.0	-48.	1422.	23.9

TABLE XXIII. DATA SUMMARY FOR CONFIGURATION FWP_1H_3

TEST CONDITIONS			TUNNEL BALANCE DATA			ROTOR DATA	
M	q,PSF	α,DEG	L/q,FT²	f,FT²	PM/q,FT³	N,RPM	f_{RH},FT²
.2	59.6	.8	348.2	64.0	71.	1422.	16.6
.2	59.8	3.0	415.8	73.5	327.	1422.	16.9
.2	59.7	5.1	476.4	84.4	557.	1422.	17.3
.2	60.0	7.3	535.3	97.7	808.	1422.	17.5
.2	59.8	9.4	589.6	113.6	1027.	1422.	17.4
.2	59.1	.8	349.7	63.9	83.	1422.	16.6
.2	59.4	.8	348.0	63.4	78.	711.	16.6
.2	59.4	.8	347.2	63.8	79.	0.	16.5
.2	60.1	-1.3	283.8	56.1	-137.	1422.	16.4
.2	59.0	-3.5	201.4	48.4	-307.	1422.	17.9
.2	58.6	-5.7	126.0	45.4	-435.	1422.	17.7
.2	58.7	-7.9	41.8	42.6	-546.	1422.	17.6
.2	58.8	-10.1	-40.2	43.2	-643.	1422.	18.0
.2	58.4	-12.3	-117.9	46.6	-767.	1422.	17.1
.2	57.4	-15.6	-240.7	58.9	-1038.	1422.	17.7
.2	59.1	.8	332.7	60.1	79.	1422.	16.6
.3	127.8	3.0	427.7	76.9	350.	1422.	17.2
.3	129.4	5.2	491.5	88.5	617.	1422.	17.7
.3	128.5	7.3	554.0	102.9	860.	1422.	17.1
.3	128.2	9.4	602.5	118.6	1065.	1422.	17.4
.3	129.1	.8	353.6	66.0	92.	1422.	17.6
.3	130.4	.8	346.2	64.0	91.	711.	17.5
.3	128.3	.8	352.0	69.2	101.	0.	18.9
.3	129.1	-1.3	282.0	56.9	-126.	1422.	17.6
.3	129.1	-3.5	204.6	50.3	-324.	1422.	17.4
.3	128.6	-5.7	122.1	45.5	-455.	1422.	17.1
.3	128.0	-7.9	39.0	43.5	-579.	1422.	17.3
.3	129.0	-10.1	-43.5	43.4	-698.	1422.	17.9
.3	129.9	-12.3	-120.8	47.2	-840.	1422.	18.0
.3	129.1	-15.6	-238.6	57.2	-1084.	1422.	17.4
.3	128.8	.8	351.6	65.4	93.	1422.	17.6
.4	216.0	.9	362.9	69.6	96.	1422.	17.9
.4	214.6	3.0	441.6	82.1	391.	1422.	17.6
.4	216.5	5.2	499.3	93.8	619.	1422.	17.8
.4	217.2	7.2	539.2	107.8	850.	1422.	17.9
.4	216.3	.8	360.2	69.3	94.	1422.	17.9
.4	215.2	.9	361.5	69.5	99.	711.	17.6
.4	216.0	.8	359.0	73.2	102.	0.	18.6
.4	215.5	-1.3	286.8	59.8	-125.	1422.	18.1
.4	216.1	-3.5	207.4	52.4	-328.	1422.	18.3
.4	215.6	-5.7	125.6	47.7	-474.	1422.	18.0
.4	215.1	-7.9	42.0	45.3	-605.	1422.	17.2
.4	214.7	.9	366.0	70.3	126.	1422.	18.3
.5	319.5	.9	377.6	77.3	62.	1422.	19.0
.5	319.1	3.0	450.1	90.7	296.	1422.	19.1
.5	320.4	4.1	472.1	95.5	454.	1422.	19.1
.5	320.5	5.2	499.7	103.2	504.	1422.	19.2
.5	321.5	1.3	532.2	114.6	-569.	1422.	19.4
.5	321.4	6.2	531.3	114.9	742.	1422.	19.4
.5	317.0	.9	375.1	77.7	54.	1422.	19.2
.5	319.1	.9	376.3	77.6	49.	711.	19.1
.5	318.8	.9	379.4	79.7	87.	0.	20.3
.5	319.1	-1.3	298.7	67.2	-183.	1422.	19.4
.5	317.8	-2.4	259.0	62.6	-285.	1422.	19.5
.5	319.0	-3.5	216.2	58.2	-382.	1422.	19.5
.5	319.6	-5.7	130.3	52.7	-565.	1422.	19.5
.5	319.8	.9	374.2	77.6	57.	1422.	19.5
.6	427.6	.9	389.0	95.9	-57.	1422.	19.6
.6	437.4	2.0	432.3	105.4	94.	1422.	19.5
.6	427.7	.9	391.3	95.2	-22.	1422.	19.7
.6	430.5	.9	389.5	94.6	-26.	711.	19.0
.6	429.0	.9	395.6	92.2	-15.	0.	16.9
.6	427.6	-.2	349.3	93.1	-148.	1422.	19.6
.6	423.3	-1.3	307.3	91.8	-252.	1422.	19.7
.6	428.2	-2.4	263.5	75.9	-382.	1422.	19.7
.6	429.7	-3.5	221.0	70.8	-504.	1422.	19.7

TABLE XXIV. DATA SUMMARY FOR CONFIGURATION FWP_1F_R

TEST CONDITIONS			TUNNEL BALANCE DATA			ROTOR DATA	
M	q,PSF	α,DEG	L/q,FT^2	f,FT^2	PM/q,FT^3	N,RPM	f_{RH},FT^2
.2	56.7	.9	378.0	65.1	51.	1422.	11.9
.2	57.2	3.0	426.8	71.1	255.	1422.	12.0
.2	57.8	5.2	489.9	83.0	502.	1422.	13.6
.2	58.3	7.3	537.9	93.8	707.	1422.	13.4
.2	58.0	9.4	598.4	112.8	958.	1422.	15.1
.2	58.1	.8	355.9	60.6	20.	1422.	11.1
.2	58.2	.9	360.6	61.2	43.	711.	11.0
.2	58.0	.9	362.5	67.6	58.	0.	14.1
.2	56.9	-1.3	297.9	54.6	-174.	1422.	10.2
.2	57.6	-3.5	216.8	47.2	-333.	1422.	12.0
.2	58.3	-5.7	134.2	42.5	-465.	1422.	11.2
.2	58.1	-7.9	52.1	39.7	-573.	1422.	11.0
.2	58.1	-10.1	-28.6	41.2	-695.	1422.	10.2
.2	58.9	-12.2	-107.3	44.2	-828.	1422.	10.6
.2	57.8	-15.5	-226.5	54.4	-1056.	1422.	10.0
.3	127.6	.9	367.4	63.7	31.	1422.	11.6
.3	130.8	3.0	428.8	72.3	241.	1422.	12.4
.3	129.1	5.2	506.7	86.9	531.	1422.	13.3
.3	129.6	7.3	567.7	102.2	754.	1422.	14.4
.3	128.3	9.5	614.4	117.8	982.	1422.	15.3
.3	128.6	.9	370.8	63.8	56.	1422.	11.6
.3	128.7	-1.3	294.6	54.0	-172.	1422.	11.0
.3	127.6	-3.5	219.2	47.6	-370.	1422.	10.2
.3	128.6	-5.7	136.0	42.8	-506.	1422.	10.0
.3	128.9	-7.9	51.5	40.3	-621.	1422.	10.7
.3	127.8	-10.1	-31.7	40.9	-749.	1422.	10.0
.3	128.5	-12.3	-111.9	44.3	-889.	1422.	10.5
.3	129.0	.9	363.9	62.5	44.	1422.	11.6
.3	128.2	.9	368.3	64.1	20.	711.	11.5
.3	128.4	.9	366.5	61.5	29.	0.	10.5
.4	214.9	.9	381.3	68.6	51.	1422.	12.1
.4	217.9	3.1	448.9	79.5	268.	1422.	13.2
.4	216.5	5.2	516.0	93.4	517.	1422.	14.1
.4	214.9	7.3	565.6	108.6	781.	1422.	15.0
.4	215.6	.9	377.2	67.9	42.	1422.	12.1
.4	215.9	.9	374.2	74.0	59.	0.	15.1
.4	216.7	.9	376.6	68.1	44.	711.	12.7
.4	216.1	-1.3	303.9	58.5	-172.	1422.	12.0
.4	216.5	-3.5	221.6	49.8	-366.	1422.	11.7
.4	215.9	-5.7	139.2	45.1	-525.	1422.	11.2
.4	219.8	-7.9	53.2	41.2	-655.	1422.	10.7
.4	215.7	.9	378.9	68.1	50.	1422.	12.9
.5	322.6	.9	380.9	78.9	71.	1422.	14.0
.5	321.9	3.1	456.6	94.1	332.	1422.	14.4
.5	321.9	4.1	477.7	101.3	475.	1422.	14.5
.5	324.9	5.2	503.5	107.7	595.	1422.	14.1
.5	322.4	6.3	546.1	118.3	764.	1422.	14.2
.5	321.3	.9	372.3	81.0	95.	1422.	12.6
.5	320.1	.9	371.4	80.8	73.	711.	12.9
.5	321.6	.9	368.4	78.5	87.	0.	13.4
.5	322.5	-1.3	295.7	68.8	-173.	1422.	11.8
.5	320.1	-2.4	259.8	64.5	-294.	1422.	11.6
.5	320.7	-3.5	219.3	60.0	-391.	1422.	11.6
.5	320.3	-5.7	137.6	52.7	-568.	1422.	10.7
.5	322.0	.9	370.4	80.6	69.	1422.	13.8
.6	432.4	2.0	429.5	101.5	173.	1422.	16.4
.6	431.2	.9	382.0	95.6	73.	1422.	15.0
.6	430.6	.9	381.7	95.9	-23.	711.	12.5
.6	432.9	.9	383.2	103.2	-37.	0.	19.7

TABLE XXV. DATA SUMMARY FOR CONFIGURATION FWP_2BLCF_f

TEST CONDITIONS				TUNNEL BALANCE DATA					ROTOR DATA	
M	q, PSF	α, DEG	f_μ, FT²	L/q, FT²	D_{BAL}/q, FT²	D_{EXT}/q, FT²	D_{EQ}/q, FT²	PM/q, FT³	N, RPM	f_{RH}, FT²
.2	53.6	[illegible]	.0	385.4	84.0	84.8	83.5	48.	[illegible]	15.6
[illegible]	[illegible]	[illegible]	.0	388.6	[illegible]	[illegible]	[illegible]	25.	1422.	18.1
.2	59.1	[illegible]	.0	390.6	[illegible]	81.8	81.8	[illegible]	1422.	14.6
.2	58.5	3.1	.0	470.9	97.1	97.1	97.1	250.	1422.	18.3
.2	59.9	5.2	.0	516.2	105.7	105.7	105.7	416.	1422.	20.5
.2	59.4	7.4	.0	576.1	122.1	122.1	122.1	581.	1422.	23.6
.2	59.1	9.5	.0	642.1	142.7	142.7	142.7	818.	1422	25.8
.2	59.3	.9	.0	391.9	83.4	83.4	83.4	25.	1422.	21.9
.2	58.7	.9	.0	394.2	83.6	83.6	83.6	19.	711.	16.6
.2	59.4	.9	.0	384.3	82.4	82.4	82.4	17.	0.	15.0
.2	59.1	-1.3	.0	305.0	72.9	72.9	72.9	[illegible]	1422.	19.3
.2	59.9	-3.4	.0	236.1	63.7	63.7	63.7	-264.	1422.	16.4
.2	60.0	-5.6	.0	152.1	56.6	56.6	56.6	-386.	1422.	14.4
.2	59.8	-7.8	.0	67.9	52.6	52.6	52.6	-503.	1422.	18.6
.2	59.3	.9	5.2	379.7	55.6	57.6	71.7	[illegible]	1422.	10.5
.2	59.5	3.0	5.2	439.0	63.4	65.4	80.5	257.	1422.	9.8
.2	58.5	5.2	5.1	512.9	76.9	79.0	94.1	541.	1422.	6.8
.2	60.0	7.3	5.1	547.5	[illegible]	88.2	103.9	716.	1422.	6.5
.2	58.3	9.5	5.1	631.4	108.9	111.0	126.1	1007.	1422.	6.2
.2	59.3	.9	5.0	376.8	55.2	57.2	72.3	21.	1422.	9.0
.2	59.3	.9	5.1	374.1	52.1	54.2	69.2	24.	711.	3.0
.2	59.0	.9	5.1	372.1	50.2	52.2	67.9	42.	0.	-.9
.2	60.0	-1.3	5.1	305.5	46.5	48.6	63.7	-198.	1422.	9.3
.2	59.7	-3.5	5.1	228.4	40.5	42.6	57.7	-368.	1422.	9.3
.2	59.8	-5.7	5.1	143.4	35.7	37.7	52.8	-493.	1422.	11.2
.2	59.6	-7.9	5.1	55.8	33.1	[illegible]	50.2	-678.	1422.	13.0
.2	60.0	.9	5.1	367.3	53.8	55.9	70.9	16.	1422.	8.2
.2	59.2	3.0	5.7	440.7	64.1	66.2	83.9	175.	1422.	12.9
.2	53.6	.9	5.7	369.4	54.5	56.4	72.9	5.	1422.	8.6
.2	58.6	.9	20.1	375.1	43.6	47.3	147.5	-96.	1422.	10.5
.2	58.8	3.0	20.1	439.7	52.2	55.9	156.2	175.	1422.	8.3
.2	58.9	5.2	20.1	507.5	64.5	[illegible]	168.2	441.	1422.	9.1
.2	59.0	7.3	20.1	566.2	77.5	81.6	181.9	666.	1422.	9.2
.2	58.9	9.5	20.1	619.3	94.3	[illegible]	198.3	946.	1422.	8.5
.2	59.4	.9	20.1	467.7	42.5	46.6	146.8	-75.	1422.	8.2
.2	58.8	.9	20.1	375.3	40.5	44.5	144.7	-73.	711.	3.0
.2	58.9	.9	20.1	368.9	38.3	42.0	142.2	-49.	0.	-.1
.2	58.5	-1.3	20.1	312.2	36.9	40.6	140.8	-280.	1422.	9.4
.2	59.3	-3.5	20.1	223.4	28.9	32.6	132.9	-466.	1422.	6.4
.2	58.2	-5.7	20.1	139.7	24.9	28.7	128.9	-594.	1422.	8.8
.2	58.8	-7.9	20.1	52.9	22.4	26.1	126.4	-717.	1422.	10.6
.2	58.9	-10.1	20.1	-31.7	23.0	26.7	127.0	-838.	1422.	11.4
.2	58.5	-12.3	20.1	-113.8	27.2	31.0	131.2	[illegible]	1422.	11.3
.2	58.2	-15.4	20.1	-233.2	39.6	43.3	143.6	-1287.	1422.	12.0
.2	58.6	.9	20.1	371.1	43.9	47.6	147.8	-54.	1422.	10.5
.2	53.5	3.0	19.4	437.2	50.8	54.6	170.2	156.	1422.	16.9
.2	53.9	5.2	20.3	504.4	61.7	65.5	181.1	406.	1422.	19.1
.2	53.2	7.3	20.8	563.1	74.7	78.6	194.2	[illegible]	1422.	14.5
.2	54.0	.9	22.3	367.5	40.7	44.6	160.7	[illegible]	1422.	14.1
.2	53.5	.9	38.9	368.9	28.2	33.7	279.2	[illegible]	1422.	17.3
.2	53.1	7.4	38.9	568.6	63.4	68.6	314.4	[illegible]	1422.	15.7
.3	122.6	.9	.0	387.2	85.7	85.7	85.7	47.	1422.	20.8
.3	128.8	.9	.0	390.3	84.7	84.7	84.7	17.	1422.	21.2
.3	129.7	3.1	.0	460.3	95.9	95.9	95.9	189.	1422.	23.8

TABLE XXV - CONTINUED

TEST CONDITIONS				TUNNEL BALANCE DATA					ROTOR DATA	
M	q,PSF	α,DEG	f_μ,FT^2	L/q,FT^2	D_{BAL}/q,FT^2	D_{EXT}/q,FT^2	D_{EQ}/q,FT^2	PM/q,FT^3	N,RPM	f_{RH},FT^2
.3	128.1	5.3	.0	535.5	112.6	112.6	112.6	405.	1422.	25.3
.3	128.5	7.4	.0	590.6	127.4	127.4	127.4	596.	1422.	27.0
.3	127.3	.9	.0	391.8	84.9	84.9	84.9	0.	1422.	21.6
.3	127.7	.9	.0	390.8	84.7	84.7	84.7	8.	711.	21.2
.3	127.9	.9	.0	387.4	83.5	83.5	83.5	34.	0.	18.8
.3	127.2	-1.3	.0	318.8	74.1	74.1	74.1	-165.	1422.	20.9
.3	128.3	-3.4	.0	236.7	64.5	64.5	64.5	-298.	1422.	19.6
.3	127.9	-5.6	.0	149.8	57.1	57.1	57.1	-436.	1422.	17.7
.3	122.9	.9	2.2	390.4	63.5	64.9	70.0	17.	1422.	14.3
.3	127.7	.9	8.6	384.2	57.5	60.1	90.9	-69.	1422.	16.4
.3	127.2	3.1	8.6	463.0	70.3	72.9	103.7	182.	1422.	18.2
.3	127.8	5.3	8.6	531.2	83.4	85.9	116.7	440.	1422.	19.8
.3	128.4	7.4	8.6	590.7	99.6	102.1	133.0	688.	1422.	21.7
.3	128.3	.9	8.6	383.2	58.0	60.5	91.3	-58.	1422.	17.1
.3	128.8	.9	8.6	385.0	58.0	60.5	91.3	-58.	711.	15.3
.3	128.3	.9	8.6	386.6	59.4	62.0	92.8	-46.	0.	12.5
.3	127.4	-1.3	8.6	314.8	49.2	51.7	82.5	-270.	1422.	13.9
.3	128.0	-3.5	8.6	232.4	40.6	43.1	74.0	-450.	1422.	12.3
.3	126.6	-5.6	8.6	147.8	35.8	38.4	69.2	-584.	1422.	11.1
.3	126.7	.9	8.6	387.3	58.3	60.8	91.7	-46.	1422.	14.6
.3	123.4	.9	9.0	377.1	52.1	54.7	87.0	35.	1422.	12.4
.3	120.9	3.1	9.0	454.7	62.7	65.3	98.5	274.	1422.	12.6
.3	123.1	5.2	9.0	514.5	73.4	76.0	109.1	545.	1422.	11.9
.4	214.0	.9	.0	401.5	87.8	87.8	87.8	-22.	1422.	23.4
.4	214.2	3.1	.0	473.0	100.7	100.7	100.7	405.	1422.	24.9
.4	211.4	5.2	.0	526.7	117.3	117.3	117.3	1804.	1422.	26.0
.4	214.7	.9	.0	399.3	86.7	86.7	86.7	-26.	1422.	23.4
.4	215.1	.9	.0	400.0	87.2	87.2	87.2	-43.	711.	23.4
.4	214.9	1.0	.0	404.1	86.5	86.5	86.5	-39.	0.	22.6
.4	214.4	-1.2	.0	324.9	75.5	75.5	75.5	-192.	1422.	22.3
.4	213.7	-3.4	.0	242.8	66.4	66.4	66.4	-357.	1422.	21.0
.4	214.5	-5.6	.0	154.9	58.9	58.9	58.9	-507.	1422.	19.9
.4	211.8	1.0	.0	404.8	88.2	88.2	88.2	-28.	1422.	23.0
.4	211.0	1.0	1.1	403.2	74.5	75.6	77.8	-15.	1422.	16.8
.4	215.1	.9	8.5	379.7	58.0	60.9	90.5	19.	1422.	10.5
.4	217.8	3.1	8.5	457.8	69.6	72.5	102.1	303.	1422.	9.0
.4	215.2	.9	8.5	386.3	57.2	60.1	89.9	4.	1422.	12.2
.4	213.2	3.1	8.5	462.8	68.4	71.2	101.1	321.	1422.	11.7
.4	212.9	5.2	8.5	522.1	82.5	85.3	115.2	1675.	1422.	10.5
.4	212.1	.9	8.5	395.6	58.0	60.9	90.7	-177.	1422.	11.2
.4	215.8	.9	8.5	383.6	55.7	58.5	88.4	60.	711.	9.6
.4	214.1	.9	8.5	381.8	55.4	58.2	85.1	9.	0.	9.7
.4	213.5	-1.3	8.5	308.7	47.0	49.8	79.7	-224.	1422.	12.5
.4	212.3	-3.4	8.5	233.4	39.8	42.7	72.6	-423.	1422.	13.3
.4	213.0	-5.7	8.5	146.7	34.5	37.3	67.2	-567.	1422.	13.9
.4	210.9	[illegible]	8.5	387.2	58.2	61.1	90.9	[illegible]	1422.	11.6
.4	215.8	5.2	8.5	510.6	81.2	84.1	[illegible]	[illegible]	1422.	8.0
.5	317.4	1.0	.0	418.7	96.2	96.2	96.2	-.5.	1422.	23.9
.5	318.2	3.2	.0	494.2	110.7	110.7	110.7	200.	1422.	24.9
.5	318.4	4.2	.0	526.1	117.3	117.3	117.3	331.	1422.	25.7
.5	319.5	5.3	.0	559.7	126.5	126.5	126.5	474.	1422.	26.5
.5	317.7	1.0	.0	415.6	95.2	95.2	95.2	-5.	1422.	24.0
.5	318.6	1.0	.0	416.1	95.3	95.3	95.3	-30.	711.	23.9
.5	317.1	1.0	.0	415.8	96.1	96.1	96.1	-16.	0.	23.5

TABLE XXV - CONCLUDED

TEST CONDITIONS				TUNNEL BALANCE DATA					ROTOR DATA	
M	q,PSF	α,DEG	f_μ,FT²	L/q,FT²	D_{GAL}/q,FT²	D_{EXT}/q,FT²	D_{EQ}/q,FT²	PM/q,FT³	N,RPM	f_{RH},FT²
.5	317.6	-1.2	.0	332.0	81.6	81.8	81.8	-226.	1422.	23.2
.5	316.4	-2.3	.0	294.1	77.6	77.6	77.6	-317.	1422.	22.5
.5	316.8	-3.4	.0	249.7	72.7	72.7	72.7	-415.	1422.	22.2
.5	317.7	1.0	.0	417.4	96.1	96.1	96.1	-18.	1422.	24.0
.6	424.7	-1.2	.0	358.9	94.0	94.0	94.0	-329.	1422.	24.0
.6	424.6	-1.2	.0	359.9	94.4	94.4	94.4	-352.	1422.	24.4
.6	424.9	-2.3	.0	309.1	90.1	90.1	90.1	-477.	1422.	24.0
.6	423.7	-3.4	.0	263.5	85.0	85.0	85.0	-599.	1422.	23.7
.6	425.1	-1.2	.0	359.5	94.5	94.5	94.5	-348.	1422.	24.7
.6	424.8	-1.1	.4	363.2	92.9	93.8	94.5	-330.	1422.	23.3
.6	423.9	-1.2	2.0	356.4	91.2	92.8	97.4	-427.	1422.	22.1
.6	424.1	-1.3	2.0	354.5	91.0	92.5	97.2	-314.	1422.	22.7
.6	424.3	-2.4	2.0	305.2	83.2	84.8	89.4	-450.	1422.	21.9
.6	423.1	-3.4	2.0	262.5	78.2	79.7	84.4	-574.	1422.	21.4
.6	423.4	-1.2	2.0	359.1	91.5	93.0	97.7	-322.	1422.	22.5
.6	423.4	-1.2	3.7	349.1	89.3	91.5	101.4	-338.	1422.	21.7
.6	424.3	-1.2	5.4	360.6	88.6	91.4	107.2	-280.	1422.	24.5
.6	425.4	-1.2	5.4	357.7	88.2	91.0	106.8	-349.	711.	24.5
.6	425.4	-1.2	5.4	358.9	88.9	91.7	107.5	-287.	0.	24.7
.6	423.5	-2.3	5.4	313.6	80.8	83.6	99.4	-421.	1422.	23.9
.6	423.1	-3.4	5.4	266.5	74.0	76.8	92.6	-561.	1422.	23.4
.6	423.9	-1.3	5.4	350.1	87.4	90.2	106.0	-365.	1422.	24.6

APPENDIX II

PYLON AND WING ROOT PRESSURE COEFFICIENT TABLES

TABLE XXVI. PRESSURE COEFFICIENTS MEASURED ON CONFIGURATION FP_1 AT VARIOUS MACH NUMBERS AND ANGLES OF ATTACK

(a) $M = 0.2$, $\alpha = -4.2$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.753					
-14.0		-.071				.191					
-10.5	-.137	-.192		-.126		-.047		-.166			
-6.5						-.206					
-6.0	-.218	-.198	-.194	-.183				-.203	-.207	-.187	-.178
-3.0		-.152	-.151	-.153		-.163		-.189	-.157	-.178	
-1.5						-.168					
0		-.128	-.152	-.170				-.189	-.155	-.123	
1.5						-.214					
2.0				-.246				-.214			
3.0		-.096	-.134		-.359	-.387	-.349		-.112	-.099	
4.0				-.126				-.205			
5.5						-.027					
6.0		-.056		-.005	.072		.081	.017		-.069	
8.0				-.020				.019			
9.0	-.086	-.092				-.017				-.114	-.093
10.0				-.075				-.103			
12.0	-.168	-.175		-.183		-.179		-.185		-.153	-.157
16.0	-.198	-.196		-.173		-.202		-.186		-.168	-.161
20.0		-.047				-.051				-.025	

TABLE XXVI - Continued

(b) $M = 0.2$, $\alpha = 0.0$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.739					
-14.0		-.024				.148					
-10.5	-.101	-.161		-.105		-.080		-.151			
-6.5						-.225					
-6.0	-.178	-.141	-.153	-.180				-.182	-.197	-.169	-.131
-3.0		-.099	-.130	-.131		-.164		-.171	-.135	-.125	
-1.5						-.164					
0		-.099	-.122	-.160				-.179	-.131	-.106	
1.5						-.204					
2.0				-.231				-.229			
3.0		-.074	-.143		-.339	-.355	-.316		-.096	-.065	
4.0				-.136				-.209			
5.5						.014					
6.0		-.047		-.031	.090		.090	.005		-.054	
8.0				-.012				.005			
9.0	-.064	-.064				.011				-.079	-.077
10.0				-.068				-.097			
12.0	-.139	-.153		-.159		-.147		-.161		-.133	-.144
16.0	-.184	-.174		-.151		-.149		-.159		-.139	-.154
20.0		-.029				-.018				-.002	

TABLE XXVI - Continued

(c) $M = 0.2$, $\alpha = 4.0$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.729					
-14.0		-.009				.090					
-10.5	-.098	-.178		-.134		-.140		-.170			
-6.5						-.279					
-6.0	-.187	-.155	-.169	-.202				-.202	-.201	-.181	-.145
-3.0		-.130	-.159	-.165		-.205		-.179	-.145	-.143	
-1.5						-.192					
0		-.128	-.166	-.194				-.181	-.152	-.139	
1.5						-.218					
2.0				-.256				-.232			
3.0		-.109	-.193		-.340	-.345	-.313		-.143	-.099	
4.0				-.187				-.238			
5.5						.009					
6.0		-.081		-.085	.067		.061	-.036		-.088	
8.0				-.041				-.005			
9.0	-.085	-.100				.001				-.105	-.107
10.0				-.081				-.100			
12.0	-.163	-.193		-.163		-.140		-.163		-.167	-.186
16.0	-.206	-.216		-.149		-.140		-.151		-.171	-.196
20.0		-.045				-.020				-.023	

TABLE XXVI - Continued

(d) $M = 0.4$, $\alpha = -4.2$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.737					
-14.0		-.108				.170					
-10.5	-.186	-.252		-.185		-.087		-.200			
-6.5						-.277					
-6.0	-.274	-.203	-.214	-.246				-.227	-.270	-.258	-.236
-3.0		-.186	-.195	-.226		-.230		-.240	-.214	-.219	
-1.5						-.238					
0		-.167	-.202	-.239				-.253	-.219	-.185	
1.5						-.282					
2.0				-.326				-.307			
3.0		-.129	-.196		-.435	-.461	-.417		-.181	-.148	
4.0				-.186				-.244			
5.5						-.076					
6.0		-.097		-.053	.028		.036	-.016		-.125	
8.0				-.061				-.024			
9.0	-.121	-.125				-.053				-.168	-.152
10.0				-.114				-.148			
12.0	-.206	-.217		-.224		-.210		-.218		-.218	-.235
16.0	-.237	-.249		-.217		-.240		-.232		-.224	-.222
20.0		-.091				-.089				-.086	

TABLE XXVI - Continued

(e) $M = 0.4$, $\alpha = -0.1$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.729					
-14.0		-.090				.106					
-10.5	-.165	-.255		-.182		-.145		-.211			
-6.5						-.314					
-6.0	-.266	-.202	-.212	-.250				-.240	-.265	-.256	-.225
-3.0		-.184	-.196	-.222		-.250		-.254	-.217	-.215	
-1.5						-.247					
0		-.170	-.196	-.237				-.271	-.228	-.188	
1.5						-.290					
2.0				-.319				-.303			
3.0		-.149	-.213		-.434	-.458	-.413		-.193	-.168	
4.0				-.212				-.280			
5.5						-.050					
6.0		-.112		-.091	.007		.019	-.064		-.138	
8.0				-.079				-.048			
9.0	-.128	-.135				-.052				-.173	-.162
10.0				-.127				-.151			
12.0	-.211	-.230		-.226		-.206		-.222		-.225	-.255
16.0	-.261	-.251		-.211		-.223		-.224		-.240	-.252
20.0		-.090				-.076				-.088	

TABLE XXVI - Continued

(f) $M = 0.4$, $\alpha = 4.1$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.732					
-14.0		-.057				.058					
-10.5	-.132	-.239		-.187		-.187		-.208			
-6.5						-.339					
-6.0	-.248	-.194	-.210	-.259				-.242	-.249	-.241	-.210
-3.0		-.172	-.199	-.232		-.261		-.235	-.215	-.211	
-1.5						-.254					
0		-.166	-.206	-.249				-.255	-.225	-.191	
1.5						-.285					
2.0				-.327				-.293			
3.0		-.148	-.246		-.411	-.429	-.397		-.216	-.168	
4.0				-.233				-.297			
5.5						-.047					
6.0		-.118		-.120	.004		.014	-.080		-.146	
8.0				-.086				-.045			
9.0	-.119	-.136				-.035				-.169	-.156
10.0				-.122				-.138			
12.0	-.205	-.232		-.221		-.191		-.203		-.220	-.254
16.0	-.267	-.263		-.191		-.185		-.188		-.228	-.246
20.0		-.075				-.046				-.077	

TABLE XXVI - Continued

(g) $M = 0.6$, $\alpha = -4.3$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.771					
-14.0		-.165				.150					
-10.5	-.255	-.350		-.250		-.145		-.261			
-6.5						-.338					
-6.0	-.352	-.280	-.285	-.325				-.282	-.319	-.325	-.305
-3.0		-.250	-.275	-.289		-.294		-.303	-.285	-.285	
-1.5						-.302					
0		-.221	-.279	-.305				-.310	-.286	-.248	
1.5						-.344					
2.0				-.409				-.364			
3.0		-.195	-.260		-.523	-.565	-.499		-.239	-.214	
4.0				-.244				-.336			
5.5						-.089					
6.0		-.143		-.093	-.023		-.018	-.076		-.175	
8.0				-.104				-.071			
9.0	-.167	-.188				-.098				-.208	-.205
10.0				-.166				-.204			
12.0	-.271	-.290		-.290		-.291		-.292		-.277	-.302
16.0	-.313	-.318		-.300		-.320		-.314		-.298	-.308
20.0		-.142				-.147				-.137	

TABLE XXVI - Continued

(h) $M = 0.6$, $\alpha = 0.0$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.769					
-14.0		-.128				.095					
-10.5	-.235	-.322		-.250		-.193		-.257			
-6.5						-.385					
-6.0	-.341	-.273	-.285	-.322				-.295	-.322	-.311	-.287
-3.0		-.250	-.260	-.285		-.309		-.303	-.283	-.278	
-1.5						-.316					
0		-.220	-.269	-.306				-.319	-.290	-.248	
1.5						-.351					
2.0				-.406				-.357			
3.0		-.200	-.288		-.512	-.540	-.497		-.265	-.226	
4.0				-.277				-.358			
5.5						-.076					
6.0		-.156		-.131	-.044		-.046	-.119		-.189	
8.0				-.105				-.083			
9.0	-.177	-.180				-.089				-.222	-.212
10.0				-.170				-.200			
12.0	-.268	-.288		-.289		-.274		-.291		-.278	-.316
16.0	-.341	-.329		-.282		-.288		-.296		-.299	-.315
20.0		-.134				-.130				-.135	

TABLE XXVI - Concluded

(i) $M = 0.6$, $\alpha = 4.1$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.778					
-14.0		-.093				.050					
-10.5	-.189	-.307		-.251		-.231		-.247			
-6.5						-.394					
-6.0	-.315	-.254	-.264	-.314				-.289	-.321	-.291	-.259
-3.0		+.227	-.248	-.273		-.310		-.302	-.263	-.268	
-1.5						-.306					
0		-.222	-.263	-.300				-.314	-.271	-.246	
1.5						-.335					
2.0				-.391				-.369			
3.0		-.204	-.313		-.477	-.506	-.487		-.272	-.234	
4.0				-.291				-.379			
5.5						-.088					
6.0		-.151		-.156	-.051		-.057	-.137		-.168	
8.0				-.113				-.097			
9.0	-.157	-.180				-.061				-.215	-.211
10.0				-.161				-.195			
12.0	-.258	-.300		-.280		-.243		-.272		-.274	-.324
16.0	-.342	-.330		-.262		-.246		-.254		-.294	-.316
20.0		-.122				-.097				-.112	

TABLE XXVII. PRESSURE COEFFICIENTS MEASURED ON CONFIGURATION FP_2 AT VARIOUS MACH NUMBERS AND ANGLES OF ATTACK

(a) $M = 0.2$, $\alpha = -4.3$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.623					
-14.0		-.119				.047				-.178	
-10.5	-.258	-.248		-.202		-.212		-.218		-.258	-.241
-6.0	-.233	-.267		-.260		-.258		-.262		-.282	-.247
-3.0		-.189	-.179	-.186		-.156		-.175	-.171	-.185	
-1.5		-.166				-.133				-.140	
0		-.145	-.125						-.127	-.128	
1.5		-.140				-.131				-.124	
3.0		-.157	-.148	-.152		-.131		-.133	-.131	-.147	
4.5		-.157								-.141	
6.0		-.189	-.177	-.194		-.158		-.167	-.173	-.160	
7.5		-.181		-.175		-.160		-.173		-.163	
9.0	.642	-.157		-.190		-.188		-.171		-.152	-.150
10.5		-.170		-.202				-.206		-.158	
12.0	-.170	-.208		-.221		-.235		-.225		-.184	-.173
16.0	-.180	-.241		-.269		-.260		-.244		-.173	-.156
20.0		-.126				-.090				-.116	

TABLE XXVII - Continued

(b) $M = 0.2$, $\alpha = 0.0$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.596					
-14.0		-.110				-.004				-.162	
-10.5	-.247	-.259		-.226		-.263		-.247		-.242	-.227
-6.0	-.236	-.282		-.273		-.274		-.274		-.278	-.237
-3.0		-.189	-.169	-.175		-.161		-.177	-.167	-.178	
-1.5		-.153				-.136				-.153	
0		-.141	-.133						-.123	-.128	
1.5		-.139				-.123				-.134	
3.0		-.155	-.140	-.136		-.134		-.131	-.125	-.139	
4.5		-.155								-.160	
6.0		-.189	-.175	-.169		-.148		-.160	-.165	-.179	
7.5		-.176		-.163		-.156		-.167		-.175	
9.0	.708	-.157		-.173		-.185		-.165		-.171	-.183
10.5		-.168		-.178				-.189		-.177	
12.0	-.205	-.199		-.209		-.226		-.215		-.196	-.165
16.0	-.211	-.232		-.238		-.226		-.217		-.185	-.173
20.0		-.122				-.068				-.086	

TABLE XXVII - Continued

(c) $M = 0.2$, $\alpha = 4.0$ deg

PYLON AND INSERT

STATION INCHES	0	30	45	60	80	90	100	120	135	150	180
				CUT (DEGREES)							
-16.0						.606					
-14.0		-.065				-.057				-.135	
-10.5	-.183	-.228		-.247		-.314		-.270		-.236	-.176
-6.0	-.202	-.257		-.297		-.306		-.297		-.280	-.233
-3.0		-.183	-.182	-.185		-.166		-.199	-.174	-.188	
-1.5		-.154				-.146				-.158	
0		-.145	-.130						-.128	-.126	
1.5		-.146				-.136				-.135	
3.0		-.167	-.161	-.128		-.134		-.134	-.139	-.137	
4.5		-.167								-.146	
6.0		-.183	-.176	-.185		-.163		-.168	-.161	-.165	
7.5		-.175		-.157		-.153		-.157		-.176	
9.0	.943	-.165		-.180		-.172		-.153		-.144	-.182
10.5		-.177		-.186				-.183		-.157	
12.0	-.198	-.215		-.207		-.215		-.207		-.180	-.185
16.0	-.209	-.251		-.219		-.192		-.190		-.172	-.168
20.0		-.110				-.044				-.081	

TABLE XXVII - Continued

(d) $M = 0.4$, $\alpha = -4.2$ deg

PYLON AND INSERT

STATION INCHES	0	30	45	60	80	90	100	120	135	150	180
				CUT (DEGREES)							
-16.0						.638					
-14.0		-.152				.038				-.204	
-10.5	-.294	-.286		-.222		-.251		-.243		-.271	-.282
-6.0	-.264	-.292		-.293		-.285		-.286		-.308	-.275
-3.0		-.208	-.209	-.204		-.192		-.207	-.199	-.202	
-1.5		-.170				-.166				-.169	
0		-.154	-.160						-.156	-.141	
1.5		-.155				-.160				-.150	
3.0		-.181	-.180	-.173		-.165		-.157	-.159	-.155	
4.5		-.181								-.177	
6.0		-.210	-.216	-.225		-.197		-.207	-.205	-.197	
7.5		-.200		-.206		-.203		-.200		-.201	
9.0	.672	-.179		-.226		-.226		-.209		-.184	-.193
10.5		-.187		-.223				-.232		-.194	
12.0	-.189	-.230		-.251		-.266		-.262		-.218	-.196
16.0	-.203	-.263		-.293		-.295		-.267		-.215	-.194
20.0		-.134				-.116				-.130	

TABLE XXVII - Continued

(e) $M = 0.4$, $\alpha = -0.3$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.617					
-14.0		-.133				-.021				-.179	
-10.5	-.284	-.281		-.255		-.299		-.268		-.261	-.258
-6.0	-.272	-.299		-.308		-.310		-.301		-.305	-.281
-3.0		-.219	-.217	-.219		-.199		-.205	-.202	-.201	
-1.5		-.184				-.176				-.167	
0		-.162	-.165						-.151	-.146	
1.5		-.163				-.168				-.145	
3.0		-.186	-.186	-.178		-.168		-.154	-.156	-.154	
4.5		-.186								-.193	
6.0		-.213	-.211	-.223		-.193		-.191	-.200	-.214	
7.5		-.208		-.207		-.195		-.205		-.212	
9.0	.802	-.180		-.214		-.225		-.201		-.207	-.213
10.5		-.191		-.212				-.217		-.209	
12.0	-.224	-.230		-.238		-.257		-.240		-.227	-.218
16.0	-.240	-.269		-.276		-.259		-.251		-.228	-.216
20.0		-.141				-.086				-.134	

TABLE XXVII - Continued

(f) $M = 0.4$, $\alpha = 4.0$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.613					
-14.0		-.076				-.077				-.149	
-10.5	-.209	-.246		-.278		-.344		-.295		-.249	-.197
-6.0	-.225	-.280		-.325		-.325		-.313		-.298	-.245
-3.0		-.199	-.206	-.213		-.207		-.216	-.204	-.207	
-1.5		-.168				-.181				-.167	
0		-.150	-.155						-.157	-.145	
1.5		-.143				-.163				-.148	
3.0		-.175	-.173	-.167		-.172		-.153	-.156	-.163	
4.5		-.175								-.159	
6.0		-.210	-.200	-.205		-.181		-.188	-.200	-.185	
7.5		-.203		-.184		-.185		-.186		-.190	
9.0	.755	-.171		-.197		-.202		-.192		-.185	-.204
10.5		-.183		-.200				-.194		-.188	
12.0	-.221	-.223		-.215		-.223		-.217		-.212	-.214
16.0	-.229	-.281		-.244		-.216		-.228		-.206	-.224
20.0		-.128				-.060				-.114	

TABLE XXVII - Continued

(g) $M = 0.6$, $\alpha = -4.6$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.676					
-14.0		-.202				.023				-.242	
-10.5	-.383	-.358		-.283		-.295		-.303		-.329	-.343
-6.0	-.332	-.377		-.351		-.355		-.356		-.384	-.344
-3.0		-.267	-.267	-.269		-.235		-.263	-.266	-.259	
-1.5		-.226				-.213				-.223	
0		-.209	-.209						-.212	-.189	
1.5		-.201				-.213				-.200	
3.0		-.233	-.225	-.226		-.214		-.213	-.207	-.206	
4.5		-.233								-.241	
6.0		-.263	-.280	-.286		-.245		-.261	-.265	-.252	
7.5		-.253		-.263		-.255		-.275		-.259	
9.0	.642	-.230		-.285		-.272		-.272		-.253	-.253
10.5		-.241		-.268				-.287		-.257	
12.0	-.253	-.283		-.312		-.328		-.312		-.283	-.258
16.0	-.264	-.327		-.363		-.358		-.338		-.277	-.252
20.0		-.181				-.155				-.193	

TABLE XXVII - Continued

(h) $M = 0.6$, $\alpha = -0.3$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.660					
-14.0		-.169				-.040				-.216	
-10.5	-.337	-.339		-.309		-.356		-.327		-.316	-.300
-6.0	-.316	-.361		-.372		-.380		-.368		-.363	-.325
-3.0		-.256	-.256	-.250		-.251		-.262	-.252	-.251	
-1.5		-.221				-.216				-.206	
0		-.194	-.198						-.192	-.186	
1.5		-.188				-.215				-.194	
3.0		-.223	-.217	-.227		-.219		-.212	-.209	-.210	
4.5		-.223								-.228	
6.0		-.255	-.255	-.270		-.247		-.246	-.264	-.249	
7.5		-.248		-.249		-.233		-.250		-.252	
9.0	.832	-.223		-.259		-.276		-.260		-.246	-.253
10.5		-.218		-.255				-.270		-.250	
12.0	-.268	-.278		-.291		-.308		-.295		-.285	-.268
16.0	-.282	-.328		-.339		-.323		-.310		-.283	-.280
20.0		-.183				-.137				-.186	

TABLE XXVII - Concluded

(i) $M = 0.6$, $\alpha =$ 4.0 deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.661					
-14.0		-.134				-.103				-.178	
-10.5	-.289	-.320		-.346		-.403		-.350		-.302	-.249
-6.0	-.299	-.365		-.334		-.399		-.387		-.377	-.314
-3.0		-.260	-.266	-.264		-.258		-.269	-.259	-.255	
-1.5		-.228				-.220				-.221	
0		-.190	-.195						-.206	-.199	
1.5		-.191				-.211				-.190	
3.0		-.233	-.221	-.229		-.206		-.207	-.203	-.193	
4.5		-.233								-.227	
6.0		-.253	-.269	-.256		-.236		-.250	-.249	-.252	
7.5		-.250		-.243		-.238		-.253		-.250	
9.0	.731	-.234		-.261		-.256		-.248		-.244	-.261
10.5		-.227		-.242				-.253		-.257	
12.0	-.272	-.291		-.284		-.291		-.289		-.284	-.278
16.0	-.302	-.343		-.309		-.268		-.291		-.291	-.298
20.0		-.175				-.107				-.177	

TABLE XXVIII. PRESSURE COEFFICIENTS MEASURED ON CONFIGURATION FP_1H_2 AT VARIOUS MACH NUMBERS AND ANGLES OF ATTACK

(a) M = 0.2, α = -4.1 deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.680					
-14.0		-.135				.161					
-10.5	-.218	-.229		-.159		-.024		-.168			
-6.5						-.054					
-6.0	-.279	-.238	-.205	-.186				-.184	-.252	-.244	-.229
-3.0		-.248	-.221	-.269		-.310		-.308	-.242	-.258	
-1.5						-.271					
0		-.261	-.318	-.387				-.432	-.319	-.274	
1.5						-.838					
2.0				-.500				-.441			
3.0		-.211	-.295		-.579	-.540	-.534		-.289	-.238	
4.0				-.315				-.385			
5.5						-.256					
6.0		-.177		-.211	-.171		-.195	-.168		-.183	
8.0				-.128				-.126			
9.0	-.169	-.180				-.132				-.147	-.179
10.0				-.144				-.205			
12.0	-.248	-.256		-.230		-.173		-.216		-.204	-.220
16.0	-.252	-.243		-.200		-.225		-.229		-.206	-.233
20.0		-.114				-.157				-.098	

TABLE XXVIII - Continued

(b) M = 0.2, α = 0.0 deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.668					
-14.0		-.135				.078					
-10.5	-.196	-.223		-.161		-.093		-.155			
-6.5						-.120					
-6.0	-.259	-.214	-.221	-.194				-.177	-.250	-.264	-.224
-3.0		-.232	-.227	-.224		-.216		-.262	-.229	-.246	
-1.5						-.255					
0		-.256	-.292	-.390				-.443	-.319	-.242	
1.5						-.740					
2.0				-.490				-.479			
3.0		-.225	-.316		-.530	-.559	-.532		-.309	-.253	
4.0				-.364				-.424			
5.5						-.266					
6.0		-.194		-.166	-.223		-.139	-.192		-.213	
8.0				-.119				-.144			
9.0	-.196	-.192				-.132				-.151	-.196
10.0				-.174				-.210			
12.0	-.247	-.269		-.252		-.217		-.241		-.205	-.246
16.0	-.280	-.247		-.196		-.201		-.230		-.211	-.260
20.0		-.110				-.141				-.100	

TABLE XXVIII - Continued

(c) $M = 0.2$, $\alpha = 4.0$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.694					
-14.0		-.093				.045					
-10.5	-.153	-.213		-.142		-.128		-.157			
-6.5						-.122					
-6.0	-.248	-.213	-.188	-.168				-.161	-.213	-.201	-.196
-3.0		-.208	-.192	-.189		-.156		-.205	-.218	-.220	
-1.5						-.181					
0		-.221	-.291	-.372				-.399	-.305	-.249	
1.5						-.861					
2.0				-.454				-.490			
3.0		-.233	-.355		-.548	-.499	-.612		-.321	-.218	
4.0				-.388				-.475			
5.5						-.272					
6.0		-.213		-.232	-.164		-.199	-.213		-.201	
8.0				-.186				-.152			
9.0	-.175	-.193				-.126				-.165	-.194
10.0				-.148				-.186			
12.0	-.244	-.257		-.217		-.172		-.199		-.218	-.254
16.0	-.290	-.273		-.201		-.188		-.193		-.216	-.276
20.0		-.122				-.102				-.096	

TABLE XXVIII - Continued

(d) $M = 0.4$, $\alpha = -4.0$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.707					
-14.0		-.174				.145					
-10.5	-.222	-.283		-.159		-.050		-.196			
-6.5						-.079					
-6.0	-.299	-.240	-.212	-.191				-.191	-.265	-.257	-.247
-3.0		-.260	-.253	-.277		-.268		-.297	-.261	-.260	
-1.5						-.329					
0		-.267	-.343	-.408				-.477	-.362	-.284	
1.5						-.885					
2.0				-.535				-.493			
3.0		-.267	-.349		-.609	-.515	-.645		-.341	-.273	
4.0				-.356				-.500			
5.5						-.360					
6.0		-.220		-.253	-.217		-.264	-.224		-.241	
8.0				-.195				-.157			
9.0	-.194	-.211				-.154				-.185	-.207
10.0				-.203				-.210			
12.0	-.256	-.263		-.214		-.197		-.223		-.221	-.256
16.0	-.267	-.250		-.224		-.206		-.250		-.224	-.253
20.0		-.126				-.146				-.116	

TABLE XXVIII - Continued

(e) $M = 0.4$, $\alpha = 0.0$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.688					
-14.0		-.151				.082					
-10.5	-.205	-.275		-.162		-.099		-.193			
-6.5						-.105					
-6.0	-.290	-.237	-.208	-.182				-.169	-.233	-.253	-.233
-3.0		-.250	-.224	-.219		-.217		-.258	-.248	-.259	
-1.5						-.247					
0		-.263	-.320	-.434				-.501	-.365	-.272	
1.5						-.982					
2.0				-.531				-.537			
3.0		-.278	-.379		-.619	-.592	-.596		-.374	-.285	
4.0				-.383				-.493			
5.5						-.361					
6.0		-.225		-.302	-.230		-.258	-.233		-.254	
8.0				-.200				-.179			
9.0	-.216	-.229				-.172				-.198	-.222
10.0				-.214				-.235			
12.0	-.279	-.303		-.231		-.216		-.227		-.242	-.296
16.0	-.207	-.291		-.200		-.204		-.234		-.246	-.295
20.0		-.126				-.119				-.120	

TABLE XXVIII - Continued

(f) $M = 0.4$, $\alpha = 4.0$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.681					
-14.0		-.121				.031					
-10.5	-.168	-.236		-.155		-.132		-.183			
-6.5						-.121					
-6.0	-.266	-.211	-.184	-.157				-.171	-.234	-.221	-.202
-3.0		-.214	-.187	-.197		-.146		-.228	-.206	-.229	
-1.5						-.133					
0		-.255	-.316	-.357				-.430	-.322	-.268	
1.5						-.896					
2.0				-.509				-.480			
3.0		-.260	-.351		-.627	-.615	-.615		-.351	-.283	
4.0				-.401				-.512			
5.5						-.333					
6.0		-.243		-.290	-.218		-.285	-.255		-.270	
8.0				-.233				-.185			
9.0	-.208	-.228				-.182				-.205	-.227
10.0				-.201				-.241			
12.0	-.289	-.308		-.255		-.216		-.257		-.249	-.300
16.0	-.322	-.289		-.213		-.192		-.215		-.250	-.310
20.0		-.115				-.1[illegible]1				-.109	

TABLE XXVIII - Continued

(g) $M = 0.6$, $\alpha = -4.0$ deg

PYLON AND INSERT

STATION	CUT (DEGREES)										
INCHES	0	30	45	60	80	90	100	120	135	150	180
-16.0						.737					
-14.0		-.205				.136					
-10.5	-.264	-.337		-.199		-.069		-.218			
-6.5						-.106					
-6.0	-.342	-.288	-.254	-.210				-.213	-.293	-.296	-.277
-3.0		-.292	-.269	-.290		-.134		-.341	-.309	-.320	
-1.5						-.322					
0		-.339	-.440	-.514				-.566	-.472	-.345	
1.5						-.841					
2.0				-.613				-.595			
3.0		-.364	-.439		-.661	-.654	-.642		-.455	-.370	
4.0				-.436				-.524			
5.5						-.512					
6.0		-.309		-.353	-.450		-.462	-.340		-.347	
8.0				-.340				-.341			
9.0	-.264	-.295				-.321				-.270	-.286
10.0				-.310				-.314			
12.0	-.338	-.330		-.345		-.264		-.284		-.294	-.346
16.0	-.317	-.276		-.267		-.245		-.302		-.275	-.308
20.0		-.165				-.192				-.188	

TABLE XXVIII - Continued

(h) $M = 0.6$, $\alpha = 0.0$ deg

PYLON AND INSERT

STATION	CUT (DEGREES)										
INCHES	0	30	45	60	80	90	100	120	135	150	180
-16.0						.731					
-14.0		-.190				.067					
-10.5	-.242	-.310		-.196		-.123		-.222			
-6.5						-.115					
-6.0	-.335	-.265	-.221	-.192				-.190	-.272	-.279	-.246
-3.0		-.262	-.260	-.222		-.113		-.276	-.261	-.271	
-1.5						-.263					
0		-.334	-.374	-.471				-.539	-.422	-.337	
1.5						-.945					
2.0				-.654				-.618			
3.0		-.364	-.463		-.735	-.688	-.733		-.457	-.370	
4.0				-.405				-.619			
5.5						-.541					
6.0		-.311		-.332	-.527		-.425	-.351		-.355	
8.0				-.318				-.311			
9.0	-.275	-.288				-.287				-.276	-.300
10.0				-.304				-.314			
12.0	-.361	-.366		-.330		-.272		-.318		-.304	-.358
16.0	-.343	-.306		-.283		-.237		-.285		-.287	-.354
20.0		-.209				-.191				-.188	

TABLE XXVIII — Concluded

(i) $M = 0.6$, $\alpha = 4.0$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.728					
-14.0		-.148				.023					
-10.5	-.190	-.281		-.190		-.161		-.219			
-6.5						-.129					
-6.0	-.287	-.244	-.207	-.171				-.164	-.253	-.234	-.229
-3.0		-.240	-.226	-.197		-.081		-.201	-.195	-.246	
-1.5						-.130					
0		-.315	-.382	-.395				-.446	-.354	-.330	
1.5						-1.077					
2.0				-.642				-.564			
3.0		-.379	-.461		-.730	-.695	-.721		-.447	-.382	
4.0				-.501				-.661			
5.5						-.447					
6.0		-.317		-.374	-.466		-.438	-.334		-.358	
8.0				-.331				-.328			
9.0	-.275	-.311				-.302				-.282	-.309
10.0				-.299				-.347			
12.0	-.356	-.384		-.305		-.284		-.314		-.330	-.385
16.0	-.382	-.364		-.263		-.239		-.271		-.324	-.396
20.0		-.174				-.173				-.161	

TABLE XXIX. PRESSURE COEFFICIENTS MEASURED ON CONFIGURATION FP_1F_R AT VARIOUS MACH NUMBERS AND ANGLES OF ATTACK

(a) M = 0.2, α = -4.0 deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.686					
-14.0		-.144				.296					
-10.5	-.217	-.292		-.059		.110		-.105			
-7.5						.591					
-6.0	-.344	-.279	-.239	-.174				-.175	-.257	-.259	-.245
-3.0		-.397	-.516	-.810				-.862	-.440	-.365	
-1.5											
0		-.410	-.545	-.667				-.627	-.456	-.396	
1.5											
2.0				-.669				-.567			
3.0		-.328	-.424						-.323	-.247	
4.0				-.421				-.375			
5.5						-.347					
6.0		-.204		-.295	-.331		-.259	-.069		-.177	
8.0				-.067				-.122			
9.0	-.171	-.189				.015				-.141	-.115
10.0				-.107				-.147			
12.0	-.211	-.248		-.157		-.067		-.059		-.115	-.161
16.0	-.233	-.229		-.229		-.158		-.197		-.143	-.121
20.0		-.131				-.111				-.110	

RIGID FAIRING BASE

HEIGHT ABOVE FUSELAGE (IN)	AZIMUTH (DEG), 0=FORWARD, 90=RIGHT SIDE 0	30	60	90	120	150	180	210	240	270	300	330
5.38		-1.605	-.871	-.735	-.738	-.385		-.416	-.556	-.651	-.924	-1.601
6.16	.973	-.518	-1.291	-1.044	-.613	-.396	-.268	-.272	-.410	-.634	-1.163	-.315

TABLE XXIX. - Continued

(b) M = 0.2, α = 0.0 deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.673					
-14.0		-.112				.147					
-10.5	-.166	-.181		-.081		.058		-.099			
-7.5						.594					
-6.0	-.262	-.237	-.210	-.123				-.135	-.226	-.298	-.229
-3.0		-.374	-.409	-.746				-.692	-.599	-.355	
-1.5											
0		-.393	-.525	-.695				-.522	-.471	-.328	
1.5											
2.0				-.677				-.554			
3.0		-.349	-.421						-.328	-.247	
4.0				-.338				-.275			
5.5						-.315					
6.0		-.215		-.262	-.315		-.279	-.081		-.196	
8.0				-.085				-.072			
9.0	-.177	-.163				-.116				-.194	-.199
10.0				-.126				-.152			
12.0	-.230	-.193		-.213		-.222		-.095		-.098	-.158
16.0	-.248	-.233		-.210		-.159		-.179		-.153	-.129
20.0		-.117				-.117				-.129	

RIGID FAIRING BASE

HEIGHT ABOVE FUSELAGE (IN)	AZIMUTH (DEG), 0=FORWARD, 90=RIGHT SIDE 0	30	60	90	120	150	180	210	240	270	300	330
5.38		-1.304	-.851	-.787	-.794	-.315		-.301	-.619	-.677	-.907	-1.400
6.16	.992	-.359	-1.342	-.959	-.567	-.371	-.243	-.324	-.556	-.698	-1.048	-.102

TABLE XXIX - Continued

(c) M = 0.2, α = 4.0 deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.698					
-14.0		-.077				.084					
-10.5	-.144	-.189		-.066		.058		-.085			
-6.5						.634					
-6.0	-.276	-.200	-.167	-.092				-.015	-.173	-.210	-.187
-3.0		-.347	-.401	-.629				-.680	-.372	-.288	
-1.5											
0		-.388	-.467	-.666				-.662	-.467	-.341	
1.5											
2.0				-.739				-.660			
3.0		-.371	-.463						-.372	-.282	
4.0				-.454				-.390			
5.5						-.216					
6.0		-.232		-.208	-.423		-.210	-.076		-.207	
8.0				-.114				-.099			
9.0	-.177	-.204				.013				-.124	-.161
10.0				-.222				-.039			
12.0	-.201	-.235		-.147		-.211		-.156		-.139	-.174
16.0	-.314	-.189		-.267		-.153		-.160		-.144	-.124
20.0		-.099				-.131				-.104	

RIGID FAIRING BASE

HEIGHT ABOVE FUSELAGE (IN)	AZIMUTH (DEG) , 0=FORWARD , 90=RIGHT SIDE 0	30	60	90	120	150	180	210	240	270	300	330
5.38		-1.245	-.730	-.724	-.790	-.394		-.374	-.684	-.614	-.752	-1.020
6.16	.977	-.192	-.906	-1.132	-.572	-.412	-.183	-.423	-.464	-.985	-1.245	-.361

TABLE XXIX - Continued

(d) M = 0.4, α = -4.0 deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.710					
-14.0		-.156				.188					
-10.5	-.206	-.247		-.096		.093		-.107			
-6.5						.596					
-6.0	-.344	-.289	-.264	-.183				-.118	-.239	-.281	-.258
-3.0		-.452	-.549	-.861				-.668	-.497	-.416	
-1.5											
0		-.480	-.566	-.757				-.559	-.483	-.397	
1.5											
2.0				-.761				-.684			
3.0		-.350	-.502						-.395	-.316	
4.0				-.329				-.403			
5.5						-.319					
6.0		-.261		-.289	-.354		-.249	-.136		-.231	
8.0				-.170				-.116			
9.0	-.196	-.187				-.069				-.174	-.190
10.0				-.169				-.142			
12.0	-.247	-.221		-.176		-.131		-.125		-.173	-.188
16.0	-.256	-.185		-.205		-.147		-.163		-.174	-.150
20.0		-.125				-.119				-.113	

RIGID FAIRING BASE

HEIGHT ABOVE FUSELAGE (IN)	AZIMUTH (DEG) , 0=FORWARD , 90=RIGHT SIDE 0	30	60	90	120	150	180	210	240	270	300	330
5.38		-1.660	-.886	-.768	-.767	-.338		-.314	-.605	-.651	-.797	-1.437
6.16	1.017	-.491	-1.347	-.991	-.559	-.480	-.316	-.467	-.576	-.935	-1.321	-.254

TABLE XXIX - Continued

(e) $M = 0.4$, $\alpha = 0.0$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.705					
-14.0		-.129				.130					
-10.5	-.178	-.228		-.089		.048		-.095			
-6.5						.657					
-6.0	-.318	-.255	-.168	-.091				-.093	-.203	-.246	-.244
-3.0		-.406	-.477	-.800				-.740	-.455	-.382	
-1.5											
0		-.430	-.578	-.71[illegible]				-.638	-.507	-.399	
1.5											
2.0				-.774				-.677			
3.0		-.362	-.466						-.397	-.314	
4.0				-.352				-.392			
5.5						-.351					
6.0		-.262		-.312	-.389		-.277	-.219		-.252	
8.0				-.226				-.220			
9.0	-.197	-.197				-.109				-.182	-.195
10.0				-.110				-.085			
12.0	-.205	-.233		-.173		-.109		-.191		-.176	-.214
16.0	-.252	-.179		-.257		-.123		-.177		-.176	-.171
20.0		-.132				-.156				-.131	

RIGID FAIRING BASE

HEIGHT ABOVE FUSELAGE (IN)	AZIMUTH (DEG), 0=FORWARD, 90=RIGHT SIDE 0	30	60	90	120	150	180	210	240	270	300	330
5.38		-1.455	-.844	-.825	-.802	-.452		-.300	-.559	-.619	-.899	-1.439
6.16	1.017	-.284	-1.167	-1.045	-.579	-.451	-.247	-.340	-.576	-.734	-1.248	-.306

TABLE XXIX - Continued

(f) $M = 0.4$, $\alpha = 4.0$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.707					
-14.0		-.091				.384					
-10.5	-.137	-.186		-.064		.016		-.094			
-6.5						.631					
-6.0	-.275	-.191	-.128	-.001				-.017	-.144	-.207	-.211
-3.0		-.348	-.411	-.645				-.631	-.420	-.345	
-1.5											
0		-.385	-.500	-.683				-.614	-.492	-.387	
1.5											
2.0				-.752				-.701			
3.0		-.367	-.434						-.424	-.325	
4.0				-.342				-.452			
5.5						-.344					
6.0		-.258		-.334	-.364		-.326	-.244		-.263	
8.0				-.212				-.170			
9.0	-.194	-.187				-.080				-.176	-.179
10.0				-.254				-.095			
12.0	-.259	-.237		-.164		.020		-.202		-.173	-.219
16.0	-.224	-.145		-.232		-.140		-.214		-.176	-.199
20.0		-.080				-.132				-.178	

RIGID FAIRING BASE

HEIGHT ABOVE FUSELAGE (IN)	AZIMUTH (DEG), 0=FORWARD, 90=RIGHT SIDE 0	30	60	90	120	150	180	210	240	270	300	330
5.38		-1.112	-.742	-.737	-.742	-.308		-.214	-.623	-.659	-.865	-1.227
6.16	1.022	-.105	-1.013	-1.113	-.518	-.498	-.275	-.441	-.532	-.670	-1.023	-.095

TABLE XXIX - Continued

(g) M = .6, α = -4.0 deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.753					
-14.0		-.174				.184					
-10.5	-.230	-.277		-.102		.084		-.110			
-6.5						.742					
-6.0	-.389	-.388	-.268	-.126				-.121	-.219	-.259	-.276
-3.0		-.550	-.645	-1.152				-.906	-.588	-.484	
-1.5											
0		-.595	-.718	-.799				-.621	-.582	-.476	
1.5											
2.0				-.835				-.830			
3.0		-.443	-.600						-.511	-.405	
4.0				-.469				-.634			
5.5						-.407					
6.0		-.353		-.401	-.494		-.422	-.314		-.375	
8.0				-.304				-.340			
9.0	-.258	-.259				-.287				-.230	-.262
10.0				-.164				-.292			
12.0	-.302	-.311		-.204		-.136		-.198		-.217	-.258
16.0	-.288	-.259		-.227		-.159		-.189		-.220	-.196
20.0		-.198				-.217				-.164	

RIGID FAIRING BASE

HEIGHT ABOVE FUSELAGE (IN)	AZIMUTH (DEG) , 0=FORWARD , 90=RIGHT SIDE 0	30	60	90	120	150	180	210	240	270	300	330
5.38		-1.444	-1.089	-.866	-.839	-.517		-.469	-.805	-.630	-.961	-1.444
6.16	1.056	-.338	-1.444	-1.031	-.790	-.609	-.487	-.541	-.576	-.887	-1.395	-.11

TABLE XXIX - Continued

(h) M = 0.6, α = 0.0 deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.747					
-14.0		-.148				.126					
-10.5	-.191	-.241		-.091		.032		-.097			
-6.5						.721					
-6.0	-.342	-.266	-.181	-.044				.007	-.153	-.213	-.250
-3.0		-.476	-.647	-.912				-.789	-.532	-.417	
-1.5											
0		-.549	-.672	-.831				-.563	-.579	-.443	
1.5											
2.0				-.836				-.820			
3.0		-.471	-.638						-.495	-.432	
4.0				-.443				-.559			
5.5						-.452					
6.0		-.382		-.432	-.447		-.409	-.335		-.360	
8.0				-.336				-.229			
9.0	-.252	-.281				-.269				-.248	-.262
10.0				-.238				-.282			
12.0	-.315	-.273		-.265		-.055		-.253		-.207	-.271
16.0	-.302	-.245		-.282		-.180		-.247		-.228	-.218
20.0		-.165				-.171				-.183	

RIGID FAIRING BASE

HEIGHT ABOVE FUSELAGE (IN)	AZIMUTH (DEG) , 0=FORWARD , 90=RIGHT SIDE 0	30	60	90	120	150	180	210	240	270	300	330
5.38		-1.411	-.946	-.814	-.890	-.443		-.486	-.709	-.670	-.816	-1.197
6.16	1.068	-.223	-1.445	-1.045	-.656	-.324	-.395	-.506	-.683	-.799	-1.222	-.052

TABLE XXIX - Concluded

(i) $M = 0.6$, $\alpha = 4.0$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.754					
-14.0		-.113				.071					
-10.5	-.158	-.208		-.07[illegible]		.010		-.093			
-6.5						.637					
-6.0	-.298	-.203	[illegible]	.007				.035	-.123	-.171	-.211
-3.0		-.434	-.523	-.851				-.752	-.469	-.374	
-1.5											
0		-.497	-.641	-.709				-.638	-.552	-.450	
1.5											
2.0				-.856				-.860			
3.0		-.510	-.571						-.537	-.433	
4.0				-.525				-.565			
5.5						-.432					
6.0		-.386		-.423	-.400		-.425	-.376		-.380	
8.0				-.339				-.230			
9.0	-.265	-.284				-.249				-.247	-.271
10.0				-.256				-.252			
12.0	-.322	-.296		-.260		-.200		-.217		-.201	-.291
16.0	-.291	-.224		-.282		-.170		-.260		-.226	-.231
20.0		-.163				-.195				-.202	

RIGID FAIRING BASE

HEIGHT ABOVE FUSELAGE (IN)	AZIMUTH (DEG) , 0=FORWARD , 90=RIGHT SIDE 0	30	60	90	120	150	180	210	240	270	300	330
5.38		-1.226	-.800	-.837	-.819	-.517		-.510	-.587	-.688	-.823	-1.060
6.16	1.062	-.126	-1.362	-.986	-.837	-.458	-.446	-.609	-.539	-.846	-1.230	-.108

TABLE XXX. PRESSURE COEFFICIENTS MEASURED ON CONFIGURATION FP_2BLCF_f AT VARIOUS MACH NUMBERS AND ANGLES OF ATTACK

(a) $M = 0.2$, $\alpha = -4.0$ deg, $f\mu = 0$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.678					
-14.0		-.073				.189				-.130	
-10.5	-.256	-.166		.043		.177		.013		-.151	-.213
-6.0	-.257	-.291		-.157		.247		-.117		-.272	-.266
-3.0		-.382	-.480	-.603				-.654	-.450	-.310	
-1.5		-.401								-.319	
0		-.573	-.548						-.689	-.323	
1.5		-.350								-.325	
3.0		-.401	-.439	-.469				-.366	-.282	-.300	
4.5		-.459								-.314	
6.0		-.367	-.577	-.778				-.667	-.463	-.318	
7.5		-.200		-.613				-.409		-.389	
9.0	-.205	-.121		-.484				-.094		-.130	-.171
10.5		.108		-.272				-.392		-.107	
12.0	-.013	-.103		-.369		.217		-.325		-.159	-.055
16.0	-.046	-.229		-.308		.090		-.084		-.098	-.033
20.0		-.216				-.104				-.154	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD

0	30	60	100
1.014	-.179	-1.325	-.506
	-.184	-1.344	-.517

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-.691	-.626	-.594	-.723	LEFT
-.393	-.534	-.368	-.517	RIGHT

TABLE XXX - Continued

(b) $M = 0.2$, $\alpha = 0.1$ deg, $f\mu = 0$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.644					
-14.0		-.035				.141				-.089	
-10.5	-.200	-.140		.032		.149		.014		-.127	-.173
-6.0	-.211	-.245		-.091		.282		-.082		-.228	-.235
-3.0		-.350	-.458	-.503				-.559	-.396	-.328	
-1.5		-.410								-.365	
0		-.371	-.553						-.657	-.316	
1.5		-.380								-.358	
3.0		-.444	-.516	-.728				-.540	-.327	-.298	
4.5		-.446								-.302	
6.0		-.446	-.478	-.282				-.754	-.540	-.407	
7.5		-.324		-.469				-.381		-.300	
9.0	-.208	-.163		-.516				-.544		-.282	-.177
10.5		.001		-.392				-.234		-.135	
12.0	-.050	-.210		-.446		.293		-.397		-.107	-.130
16.0	-.063	-.133		-.285		.042		-.243		-.124	-.021
20.0		-.151				-.155				-.109	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD

0	30	60	100
1.017	-.199	-1.376	-.565
	-.120	-1.453	-.531

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-.662	-.657	-.587	-.507	LEFT
-.576	-.484	-.604	-.443	RIGHT

TABLE XXX - Continued

(c) $M = 0.2$, $\alpha = 4.1$ deg, $f_\mu = 0$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.649					
-14.0		-.000				.116				-.053	
-10.5	-.128	-.066		.071		.137		.039		-.091	-.118
-6.0	-.136	-.179		.032		.333		.017		-.166	-.178
-3.0		-.245	-.356	-.375				-.529	-.309	-.280	
-1.5		-.284								-.326	
0		-.322	-.574						-.479	-.350	
1.5		-.335								-.354	
3.0		-.382	-.428	-.565				-.497	-.432	-.303	
4.5		-.367								-.360	
6.0		-.249	-.362	-.217				-.614	-.511	-.315	
7.5		-.267		-.369				-.473		-.278	
9.0	-.199	-.111		-.246				-.479		-.065	-.172
10.5		-.077		-.472				-.228		-.033	
12.0	-.038	-.302		-.177		.173		-.474		-.073	-.138
16.0	-.030	-.117		-.335		.013		-.369		-.112	-.016
20.0		-.134				-.106				-.037	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	100
1.012	-.065	-1.213	-.490
	-.067	-1.447	-.621

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-.516	-.715	-.289	-.501	LEFT
-.422	-.390	-.644	-.396	RIGHT

TABLE XXX - Continued

(d) $M = 0.2$, $\alpha = -3.9$ deg, $f_\mu = 4.65$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.561					
-14.0		-.084				.199				-.131	
-10.5	-.257	-.178		.000		.141		-.005		-.191	-.239
-6.0	-.294	-.401		-.249		.169		-.206		-.337	-.293
-3.0		-.546	-.734	-.859				-.826	-.664	-.482	
-1.5		-.651								-.519	
0		-.641	-1.171						-1.019	-.546	
1.5		-.615								-.418	
3.0		-.512	-.676	-1.032				-.572	-.454	-.335	
4.5		-.471								-.265	
6.0		-.334	-.422	-.482				-.236	-.259	-.227	
7.5		-.240		-.235				-.209		-.192	
9.0	-.189	-.097		-.049				-.151		-.139	-.177
10.5		-.107		.006				-.031		-.126	
12.0	-.133	-.090		.014		-.011		-.011		-.137	-.147
16.0	-.110	-.191		-.116		-.158		-.093		-.156	-.137
20.0		-.095				-.060				-.032	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	100
1.017	-.466	-2.284	-5.209
	-.329	-2.084	-4.208

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-1.006	-.461	-.437	.012	LEFT
-.475	-.271	-.259	-.131	RIGHT

TABLE XXX - Continued

(e) $M = 0.2$, $\alpha = 0.0$ deg, $f_\mu = 4.65\ ft^2$

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.668					
-14.0		-.054				.117				-.112	
-10.5	-.232	-.172		-.005		.132		.008		-.137	-.198
-6.0	-.285	-.339		-.169		.203		-.122		-.304	-.282
-3.0		-.557	-.681	-.805				-.717	-.578	-.388	
-1.5		-.527								-.512	
0		-.670	-1.169						-.980	-.486	
1.5		-.632								-.471	
3.0		-.610	-.758	-1.118				-.620	-.509	-.347	
4.5		-.499								-.320	
6.0		-.418	-.470	-.481				-.402	-.310	-.293	
7.5		-.281		-.235				-.245		-.220	
9.0	-.249	-.172		-.087				-.156		-.194	-.218
10.5		-.142		-.035				-.062		-.141	
12.0	-.169	-.125		-.015		.010		-.056		-.170	-.211
16.0	-.178	-.231		-.135		-.197		-.085		-.170	-.158
20.0		-.107				-.064				-.059	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	100
1.001	-.434	-2.217	-5.229
	-.284	-2.013	-4.220

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-1.056	-.691	-.400	-.128	LEFT
-.533	-.350	-.271	-.190	RIGHT

TABLE XXX - Continued

(f) $M = 0.2$, $\alpha = 4.1$ deg, $f_\mu = 4.65\ ft^2$

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.635					
-14.0		-.006				.101				-.051	
-10.5	-.185	-.119		.024		.109		-.012		-.113	-.148
-6.0	-.209	-.258		-.091		.282		-.042		-.239	-.229
-3.0		-.469	-.552	-.667				-.643	-.500	-.369	
-1.5		-.580								-.442	
0		-.614	-1.090						-.972	-.473	
1.5		-.595								-.458	
3.0		-.582	-.735	-1.077				-.646	-.539	-.379	
4.5		-.522								-.308	
6.0		-.384	-.500	-.472				-.411	-.32.	-.297	
7.5		-.313		-.244				-.278		-.244	
9.0	-.249	-.162		-.050				-.154		-.191	-.206
10.5		-.153		.020				-.038		-.146	
12.0	-.172	-.117		-.017		-.010		-.030		-.191	-.223
16.0	-.179	-.209		-.098		-.174		-.093		-.150	-.190
20.0		-.096				-.068				-.064	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	100
1.016	-.332	-2.058	-5.160
	-.205	-1.932	-4.252

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-1.036	.421	-.297	-.137	LEFT
-.609	-.534	-.379	-.156	RIGHT

TABLE XXX - Continued

(g) $M = 0.4$, $\alpha = -4.0$ deg, $f\mu = 0$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.661					
-14.0		-.106				.161				-.167	
-10.5	-.280	-.184		.020		.137		-.013		-.179	-.255
-6.0	-.239	-.311		-.153		.233		-.106		-.297	-.267
-3.0		-.402	-.523	-.603				-.570	-.449	-.319	
-1.5		-.444								-.396	
0		-.396	-.527						-.537	-.362	
1.5		-.391								-.383	
3.0		-.478	-.539	-.545				-.474	-.393	-.403	
4.5		-.551								-.467	
6.0		-.478	-.642	-.536				-.527	-.505	-.515	
7.5		-.460		-.577				-.525		-.417	
9.0	-.313	-.333		-.654				-.393		-.347	-.312
10.5		-.170		-.465				-.376		-.223	
12.0	-.082	-.068		-.308		.453		-.122		-.144	-.129
16.0	-.073	-.271		-.233		.069		-.251		-.155	-.073
20.0		-.311				-.126				-.215	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	100
1.035	-.173	-1.287	-.593
	-.119	-1.114	-.522

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-.491	-.585	-.609	-.612	LEFT
-.478	-.360	-.515	-.585	RIGHT

TABLE XXX - Continued

(h) $M = 0.4$, $\alpha = 0.1$ deg, $f\mu = 0$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.643					
-14.0		-.063				.110				-.145	
-10.5	-.225	-.137		.034		.129		-.010		-.143	-.205
-6.0	-.196	-.266		-.061		.287		-.053		-.233	-.229
-3.0		-.331	-.447	-.530				-.538	-.402	-.296	
-1.5		-.379								-.355	
0		-.385	-.499						-.637	-.323	
1.5		-.344								-.345	
3.0		-.434	-.471	-.487				-.548	-.498	-.364	
4.5		-.515								-.442	
6.0		-.478	-.652	-.604				-.619	-.623	-.465	
7.5		-.473		-.637				-.749		-.407	
9.0	-.251	-.225		-.543				-.582		-.352	-.280
10.5		-.022		-.452				-.457		-.198	
12.0	-.092	-.061		-.297		.354		-.215		-.090	-.050
16.0	-.084	-.219		-.412		.076		-.368		-.147	-.109
20.0		-.135				-.166				-.153	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	100
1.040	-.163	-1.263	-.474
	-.059	-1.199	-.518

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-.513	-.598	-.651	-.551	LEFT
-.507	-.531	-.581	-.681	RIGHT

TABLE XXX - Continued

(i) $M = 0.4$, $\alpha = 4.1$ deg, $f\mu = 0$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.639					
-14.0		-.030				.058				-.097	
-10.5	-.165	-.094		.045		.115		.010		-.091	-.144
-6.0	-.175	-.181		.026		.327		.028		-.175	-.195
-3.0		-.286	-.379	-.443				-.474	-.339	-.221	
-1.5		-.372								-.303	
0		-.369	-.549						-.664	-.326	
1.5		-.388								-.355	
3.0		-.454	-.459	-.579				-.514	-.489	-.405	
4.5		-.519								-.457	
6.0		-.447	-.600	-.537				-.585	-.630	-.457	
7.5		-.419		-.512				-.600		-.438	
9.0	-.237	-.200		-.456				-.440		-.355	-.229
10.5		-.069		-.417				-.490		-.187	
12.0	-.084	-.042		-.642		.528		-.364		-.102	-.109
16.0	-.071	-.156		-.449		-.018		-.377		-.140	-.069
20.0		-.110				-.168				-.129	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	180
1.047	-.045	-1.255	-.542
	-.011	-1.121	-.506

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-.642	-.639	-.574	-.596	LEFT
-.545	-.594	-.621	-.547	RIGHT

TABLE XXX - Continued

(j) $M = 0.4$, $\alpha = -4.1$ deg, $f\mu = 5.95$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.673					
-14.0		-.110				.168				-.177	
-10.5	-.315	-.212		-.003		.135		-.041		-.205	-.291
-6.0	-.351	-.431		-.262		.138		-.236		-.400	-.345
-3.0		-.660	-.837	-.935				-.951	-.757	-.541	
-1.5		-.779								-.650	
0		-.773	-1.247						-1.125	-.646	
1.5		-.718								-.562	
3.0		-.612	-.758	-1.222				-.698	-.556	-.418	
4.5		-.507								-.316	
6.0		-.382	-.479	-.598				-.324	-.298	-.277	
7.5		-.278		-.270				-.202		-.215	
9.0	-.211	-.146		-.055				-.113		-.172	-.207
10.5		-.117		-.027				-.042		-.135	
12.0	-.148	-.107		-.029		-.369		-.042		-.170	-.190
16.0	-.149	-.213		-.155		-.250		-.126		-.185	-.178
20.0		-.141				-.083				-.06[illegible]	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	180
1.047	-.435	-2.410	6.157
	-.325	-2.311	6.157

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-1.122	-.773	-.391	.170	LEFT
-.544	-.321	-.197	.030	RIGHT

TABLE XXX - Continued

(k) $M = 0.4$, $\alpha = 0.0$ deg, $f\mu = 5.95$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.655					
-14.0		-.086				.105				-.157	
-10.5	-.265	-.171		-.004		.112		-.032		-.172	-.244
-6.0	-.391	-.354		-.169		.199		-.148		-.335	-.309
-3.0		-.582	-.734	-.828				-.839	-.655	-.495	
-1.5		-.721								-.586	
0		-.748	-1.197						-1.082	-.609	
1.5		-.731								-.556	
3.0		-.650	-.796	-1.369				-.701	-.591	-.409	
4.5		-.565								-.344	
6.0		-.435	-.514	-.509				-.415	-.319	-.294	
7.5		-.319		-.259				-.237		-.241	
9.0	-.253	-.192		-.104				-.145		-.184	-.232
10.5		-.145		-.012				-.060		-.155	
12.0	-.187	-.152		-.022		-.096		-.074		-.193	-.224
16.0	-.173	-.240		-.146		-.250		-.118		-.190	-.211
20.0		-.144				-.098				-.090	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	90
1.040	-.348	-2.170	6.165
	-.288	-2.191	6.165

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-1.066	-.751	-.302	-.075	LEFT
-.537	-.434	-.339	-.277	RIGHT

TABLE XXX - Continued

(l) $M = 0.4$, $\alpha = 4.0$ deg, $f\mu = 5.95$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80		100	120	135	150	180
-16.0						-. 5					
-14.0		-.034				.063				-.116	
-10.5	-.200	-.121		.022		.107		-.017		-.132	-.179
-6.0	-.240	-.271		-.079		.276		-.066		-.267	-.258
-3.0		-.493	-.607	-.689				-.738	-.595	-.425	
-1.5		-.642								-.546	
0		-.691	-1.131						-1.099	-.603	
1.5		-.697								-.540	
3.0		-.637	-.831	-1.309				-.799	-.612	-.465	
4.5		-.562								-.368	
6.0		-.457	-.519	-.496				-.397	-.348	-.306	
7.5		-.332		-.225				-.294		-.249	
9.0	-.257	-.204		-.070				-.130		-.195	-.243
10.5		-.151		.004				-.086		-.150	
12.0	-.197	-.148		-.011		-.100		-.043		-.194	-.236
16.0	-.178	-.237		-.127		-.245		-.128		-.196	-.221
20.0		-.116				-.075				-.078	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	90
1.040	-.247	-2.068	6.189
	-.211	-2.078	6.189

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-1.113	-.745	-.355	-.113	LEFT
-.557	-.546	-.284	-.229	RIGHT

TABLE XXX - Continued

(m) $M = 0.6$, $\alpha = 0.1$ deg, $f\mu = 0$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.494					
-14.0		-.086				.099				-.154	
-10.5	-.238	-.127		.036		.137		.009		-.133	-.207
-6.0	-.228	-.255		-.041		.329		-.021		-.265	-.245
-3.0		-.427	-.583	-.609				-.642	-.483	-.346	
-1.5		-.517								-.402	
0		-.461	-.540						-.665	-.418	
1.5		-.467								-.497	
3.0		-.534	-.620	-.601				-.605	-.657	-.624	
4.5		-.427								-.539	
6.0		-.614	-.659	-.674				-.730	-.736	-.552	
7.5		-.521		-.642				-.619		-.593	
9.0	-.430	-.427		-.679				-.681		-.521	-.376
10.5		-.256		-.465				-.532		-.308	
12.0	-.105	-.178		-.336		.165		-.465		-.155	-.222
16.0	-.082	-.263		-.399		.098		-.376		-.176	-.113
20.0		-.264				-.197				-.175	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	100
1.082	-.075	-1.477	-.571
	-.009	-1.307	-.588

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-.660	-.654	-.656	-.629	LEFT
-.530	-.654	-.624	-.658	RIGHT

TABLE XXX - Concluded

(n) $M = 0.6$, $\alpha = 0.0$ deg, $f\mu = 2.3$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.690					
-14.0		-.101				.094				-.182	
-10.5	-.254	-.155		.029		.120		-.009		-.163	-.237
-6.0	-.261	-.307		-.058		.293		-.057		-.319	-.314
-3.0		-.522	-.648	-.672				-.811	-.644	-.559	
-1.5		-.571								-.614	
0		-.552	-.731						-1.262	-.689	
1.5		-.555								-.703	
3.0		-.659	-.543	-.627				-.613	-.599	-.464	
4.5		-.418								-.521	
6.0		-.482	-.541	-.589				-.550	-.482	-.488	
7.5		-.469		-.445				-.508		-.393	
9.0	-.338	-.294		-.315				-.333		-.333	-.340
10.5		-.215		-.189				-.223		-.242	
12.0	-.210	-.149		-.107		-.144		-.152		-.220	-.268
16.0	-.095	-.161		-.167		-.376		-.178		-.165	-.138
20.0		-.175				-.158				-.142	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	100
1.093	-.109	-1.495	3.678
	-.100	-1.495	3.678

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-.830	-.761	-.541	-.467	LEFT
-.673	-.636	-.497	-.428	RIGHT

TABLE XXXI. PRESSURE COEFFICIENTS MEASURED ON CONFIGURATION W AT VARIOUS MACH NUMBERS AND ANGLES OF ATTACK

(a) $M = 0.2$, $\alpha = -3.9$ deg

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.836	-.886	-.861	-.886	-.864	-.851	-.816	-.811	-.775	-.717	-.594	-.448	-.304	-.148
LOWER SURFACE		.244		.122	.014	-.049		-.117		-.165	-.170	-.029		.110

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.884	-.952	-.894	-.884	-.869	-.849	-.849	-.844	-.821	-.770	-.601	-.460	-.296	-.173
LOWER SURFACE		.286		.122	.011	-.032		-.102		-.115	-.074	.004		.147

TABLE XXXI - Continued

(b) $M = 0.2$, $\alpha = 0.5$ deg

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.793	-1.524	-1.356	-1.296	-1.170	-1.102	-1.037	-.997	-.919	-.831	-.650	-.457	-.279	-.125
LOWER SURFACE		.608		.395	.261	.166		.055		-.022	-.022	.010		.126

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.901	-1.662	-1.362	-1.311	-1.200	-1.128	-1.070	-1.020	-.962	-.866	-.680	-.485	-.301	-.163
LOWER SURFACE		.626		.395	.256	.186		.088		.010	.008	.080		.158

TABLE XXXI - Continued

(c) $M = 0.2$, $\alpha = 4.8$ deg

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.855	-2.199	-1.875	-1.719	-1.473	-1.327	-1.216	-1.136	-1.008	-.895	-.653	-.417	-.219	-.066
LOWER SURFACE		.836		.623	.467	.359		.206		.100	.068	.073		.145

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-3.179	-2.229	-1.947	-1.757	-1.520	-1.380	-1.251	-1.166	-1.061	-.930	-.681	-.437	-.234	-.103
LOWER SURFACE		.862		.623	.487	.382		.228		.148	.093	.125		.171

TABLE XXXI - Continued

(d) $M = 0.4$, $\alpha = -3.9$ deg

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.829	-.907	-.883	-.906	-.898	-.893	-.882	-.870	-.833	-.762	-.677	-.488	-.303	-.153
LOWER SURFACE		.290		.117	.023	-.047		-.134		-.174	-.130	-.049		.106

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.891	-.955	-.917	-.913	-.908	-.897	-.887	-.885	-.848	-.796	-.643	-.480	-.320	-.179
LOWER SURFACE		.298		.113	.016	-.039		-.108		-.133	-.083	-.006		.150

TABLE XXXI - Continued

(e) $M = 0.4$, $\alpha = 0.4$ deg

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.847	-1.595	-1.426	-1.365	-1.251	-1.166	-1.109	-1.050	-.974	-.871	-.679	-.479	-.292	-.115
LOWER SURFACE		.634		.400	.267	.175		.042		-.039	-.025	.025		.134

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.065	-1.723	-1.506	-1.388	-1.274	-1.187	-1.126	-1.070	-.999	-.913	-.707	-.504	-.310	-.138
LOWER SURFACE		.643		.414	.277	.184		.065		.013	.020	.070		.176

TABLE XXXI - Continued

(f) $M = 0.4$, $\alpha = 4.8$ deg

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-3.093	-2.344	-2.003	-1.813	-1.573	-1.398	-1.277	-1.177	-1.054	-.922	-.679	-.430	-.212	-.057
LOWER SURFACE		.859		.626	.476	.367		.202		.102	.073	.101		.154

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-3.496	-2.377	-2.083	-1.865	-1.608	-1.437	-1.310	-1.214	-1.085	-.966	-.687	-.426	-.210	-.092
LOWER SURFACE		.867		.646	.491	.376		.233		.138	.113	.132		.183

TABLE XXXI - Continued

(g) $M = 0.6$, $\alpha = -3.8$ deg

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.700	-.992	-1.003	-1.071	-1.096	-1.105	-1.101	-1.094	-1.022	-.926	-.720	-.524	-.328	-.153
LOWER SURFACE		.306		.130	.017	-.055		-.157		-.211	-.176	-.082		.109

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.821	-1.002	-1.053	-1.077	-1.106	-1.112	-1.110	-1.113	-1.060	-.972	-.762	-.542	-.346	-.174
LOWER SURFACE		.299		.112	.007	-.068		-.140		-.169	-.128	-.033		.144

TABLE XXXI - Continued

(h) $M = 0.6$, $\alpha = -1.6$ deg

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.322	-1.458	-1.373	-1.395	-1.357	-1.298	-1.260	-1.208	-1.108	-.980	-.750	-.519	-.312	-.129
LOWER SURFACE		.486		.276	.152	.067		-.057		-.125	-.114	-.042		.118

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.409	-1.604	-1.429	-1.400	-1.378	-1.309	-1.263	-1.238	-1.144	-1.030	-.778	-.544	-.335	-.153
LOWER SURFACE		.467		.269	.150	.064		-.039		-.088	-.071	.004		.155

TABLE XXXI - Continued

(i) $M = 0.6, \alpha = 0.8$ deg

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.745	-1.999	-2.024	-1.999	-1.884	-1.305	-1.337	-1.288	-1.146	-1.008	-.742	-.507	-.284	-.090
LOWER SURFACE		.439		.413	.269	.173		.027		-.057	-.060	.001		.129

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.843	-2.174	-2.176	-2.157	-2.044	-1.221	-1.276	-1.300	-1.179	-1.067	-.784	-.527	-.306	-.117
LOWER SURFACE		.639		.412	.270	.174		.056		-.012	-.011	.048		.171

TABLE XXXI - Concluded

(j) $M = 0.6, \alpha = 2.9$ deg

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.418	-2.448	-2.409	-2.412	-2.407	-2.371	-1.355	-1.102	-1.019	-.925	-.714	-.453	-.266	-.088
LOWER SURFACE		.767		.534	.382	.273		.119		.024	.005	.059		[illegible]

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.219	-2.558	-2.591	-2.542	-1.530	-2.459	-1.552	-1.051	-.982	-.944	-.727	-.490	-.300	-.128
LOWER SURFACE		.762		.531	.393	.287		.148		.070	.062	.093		.198

TABLE XXXII. PRESSURE COEFFICIENTS MEASURED ON CONFIGURATION FW AT VARIOUS MACH NUMBERS AND ANGLES OF ATTACK

(a) $M = 0.2,\ \alpha = -3.6$ deg

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.946	-1.004	-.964	-.959	-.951	-.906	-.893	-.876	-.828	-.734	-.598	-.442	-.276	-.147
LOWER SURFACE		.120		-.125	-.286	-.366		-.303		-.251	-.203	-.125		.054

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.785	-.896	-.896	-.901	-.896	-.888	-.886	-.888	-.848	-.805	-.674	-.520	-.361	-.218
LOWER SURFACE		.120		-.052	-.125	-.170		-.218		-.235	-.177	-.084		.000

TABLE XXXII - Continued

(b) $M = 0.2,\ \alpha = 0.8$ deg

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.738	-1.466	-1.318	-1.258	-1.147	-1.075	-1.011	-.954	-.873	-.801	-.620	-.442	-.272	-.126
LOWER SURFACE		.554		.290	.112	.000		-.039		-.052	-.069	-.017		.092

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.904	-1.625	-1.471	-1.362	-1.254	-1.172	-1.122	-1.080	-1.019	-.925	-.751	-.551	-.366	-.212
LOWER SURFACE		.550		.297	.181	.092		-.022		-.071	-.066	-.005		.107

TABLE XXXII - Continued

(c) $M = 0.2,\ \alpha = 5.1$ deg

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.680	-2.050	-1.756	-1.593	-1.401	-1.255	-1.150	-1.063	-.965	-.834	-.634	-.423	-.233	-.082
LOWER SURFACE		.844		.596	.438	.319		.214		.134	.088	.107		.146

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-3.166	-2.369	-2.016	-1.817	-1.585	-1.427	-1.303	-1.218	-1.114	-1.007	-.749	-.513	-.304	-.133
LOWER SURFACE		.847		.611	.436	.324		.183		.090	.064	.071		.137

TABLE XXXII - Continued

(d) $M = 0.4$, $\alpha = -3.6$ deg

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.907	-.972	-.945	-.957	-.948	-.926	-.905	-.881	-.829	-.760	-.608	-.441	-.282	-.139
LOWER SURFACE		.113		-.144	-.318	-.408		-.327		-.278	-.232	-.133		.043

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.772	-.924	-.919	-.924	-.946	-.944	-.953	-.944	-.917	-.869	-.716	-.551	-.385	-.245
LOWER SURFACE		.093		-.080	-.152	-.207		-.263		-.270	-.209	-.113		.063

TABLE XXXII - Continued

(e) $M = 0.4$, $\alpha = 0.2$ deg

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.799	-1.560	[illegible]	-1.337	-1.237	-1.156	-1.094	-1.036	-.951	-.857	-.659	-.461	-.283	-.139
LOWER SURFACE		.538		.267	.072	-.044		-.072		-.095	-.091	-.042		.089

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	[illegible]	-1.706	-1.533	-1.438	-1.332	-1.254	-1.206	-1.162	-1.081	-1.002	-.802	-.592	-.393	-.221
LOWER SURFACE		.530		.284	.160	.057		-.051		-.107	-.089	-.028		.093

TABLE XXXII - Continued

(f) $M = 0.4$, $\alpha = 5.2$ deg

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.979	-2.262	-1.937	-1.761	-1.547	-1.391	-1.270	-1.173	-1.057	-.938	-.700	-.470	-.269	-.121
LOWER SURFACE		.826		.581	.406	.278		.173		.096	.053	.055		.119

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-3.593	-2.616	-2.206	-1.982	-1.724	-1.555	-1.432	-1.327	-1.217	-1.086	-.812	-.547	-.317	-.174
LOWER SURFACE		.817		.575	.423	.302		.151		.051	.028	.049		.110

TABLE XXXII - Continued

(g) $M = 0.6$, $\alpha = -1.4$ deg

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.292	-1.507	-1.394	-1.426	-1.466	-1.367	-1.352	-1.292	-1.138	-1.004	-.743	-.504	-.303	-.149
LOWER SURFACE		.308		.013	-.204	-.352		-.281		-.279	-.243	-.148		.057

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.135	-1.484	-1.439	-1.441	-1.519	-1.555	-1.465	-1.443	-1.311	-1.167	-.905	-.656	-.441	-.263
LOWER SURFACE		.278		.059	-.064	-.149		-.257		-.290	-.239	-.138		.056

TABLE XXXII - Continued

(h) $M = 0.6$, $\alpha = 1.0$ deg

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=15.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.756	-2.002	-2.035	-1.918	-1.764	-1.832	-1.428	-1.309	-1.178	-1.032	-.760	-.509	-.302	-.139
LOWER SURFACE		.521		.237	.016	-.132		-.129		-.156	-.167	-.090		.063

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.654	-1.991	-2.060	-2.069	-2.040	-1.970	-1.993	-1.750	-1.174	-1.112	-.897	-.650	-.431	-.254
LOWER SURFACE		.488		.241	.109	.001		-.126		-.179	-.159	-.085		.075

TABLE XXXII - Concluded

(i) $M = 0.6$, $\alpha = 3.0$ deg

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.205	-2.205	-2.205	-2.205	-2.101	-2.087	-2.113	-1.310	-1.100	-.974	-.735	-.498	-.298	-.148
LOWER SURFACE		.669		.399	.196	.045		-.009		-.067	-.083	-.041		.090

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.963	-2.205	-2.205	-2.205	-2.205	-2.205	-2.205	-1.702	-1.540	-1.224	-.745	-.572	-.389	-.227
LOWER SURFACE		.635		.385	.246	.131		-.015		-.099	-.102	-.039		.088

TABLE XXXIII. PRESSURE COEFFICIENTS MEASURED ON CONFIGURATION FWP_1 AT VARIOUS MACH NUMBERS AND ANGLES OF ATTACK

(a) $M = 0.2$, $\alpha = -3.7$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.708					
-14.0		-.099				.142					
-10.5	-.087	-.180		-.137		-.124		-.153			
-6.5						-.361					
-6.0	.314	-.087	-.187	-.267				-.282	-.237	-.229	-.672
-3.0		-.684	-.464	-.404		-.375		-.443	-.416	-.095	
-1.5						-.391					
0		-.627	-.604	-.513				-.545	-.291	.307	
1.5						-.486					
2.0				-.629				-.617			
3.0		-.520	-.514		-.656	-.660	-.620		-.259	-.134	
4.0				-.384				-.500			
5.5						-.265					
6.0		-.371		-.190	-.105		-.099	-.174		-.474	
8.0				-.180				-.173			
9.0	-.210	-.257				-.137				-.447	-.568
10.0				-.219				-.271			
12.0	-.137	-.251		-.285		-.283		-.307		-.472	-.177
16.0	-.155	-.212		-.249		-.280		-.282		-.132	-.157
20.0		-.081				-.119				-.685	

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.950	-1.054	-1.019	-1.033	-1.019	-.993	-.974	-.947	-.893	-.800	-.660	-.506	-.342	-.216
LOWER SURFACE		.036		-.199	-.325	-.401		-.332		-.270	-.213	-.135		.034

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.800	-.955	-.926	-.938	-.931	-.943	-.938	-.940	-.909	-.857	-.700	-.548	-.411	-.263
LOWER SURFACE		.086		-.073	-.156	-.206		-.247		-.259	-.197	-.123		.055

TABLE XXXIII - Continued

(b) $M = 0.2$, $\alpha = 0.8$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.697					
-14.0		-.093				.059					
-10.5	-.072	-.193		-.193		-.240		-.208			
-6.5						-.482					
-6.0	.251	-.213	-.303	-.374				-.389	-.371	-.235	-.829
-3.0		-.833	-.627	-.514		-.475		-.565	-.477	-.090	
-1.5						-.493					
0		-.793	-.723	-.638				-.656	-.323	.233	
1.5						-.568					
2.0				-.715				-.690			
3.0		-.618	-.600		-.724	-.749	-.710		-.266	-.155	
4.0				-.478				-.578			
5.5						-.269					
6.0		-.444		-.249	-.158		-.156	-.238		-.647	
8.0				-.226				-.202			
9.0	-.231	-.272				-.176				-.550	-.663
10.0				-.244				-.301			
12.0	-.159	-.269		-.310		-.328		-.322		-.552	-.182
16.0	-.167	-.224		-.258		-.290		-.285		-.248	-.185
20.0		-.084				-.124				-.883	

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.860	-1.615	-1.465	-1.399	-1.301	-1.216	-1.161	-1.094	-1.016	-.902	-.733	-.531	-.352	-.181
LOWER SURFACE		.458		.218	.047	-.043		-.070		-.086	-.079	-.043		.073

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.950	-1.698	-1.506	-1.406	-1.311	-1.230	-1.194	-1.142	-1.085	-1.006	-.816	-.616	-.421	-.255
LOWER SURFACE		.534		.275	.149	.052		-.051		-.105	-.091	-.039		.073

TABLE XXXIII - Continued

(c) $M = 0.2, \alpha = 5.0$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.713					
-14.0		-.047				-.015					
-10.5	-.047	-.189		-.228		-.301		-.235			
-6.5						-.543					
-6.0	.106	-.315	-.408	-.486				-.461	-.458	-.215	-.970
-3.0		-.995	-.763	-.636		-.540		-.655	-.478	-.072	
-1.5						-.558					
0		-.932	-.813	-.705				-.723	-.316	.107	
1.5						-.618					
2.0				-.783				-.741			
3.0		-.705	-.659		-.755	-.766	-.726		-.261	-.151	
4.0				-.513				-.598			
5.5						-.291					
6.0		-.443		-.281	-.191		-.185	-.260		-.773	
8.0				-.233				-.219			
9.0	-.228	-.271				-.169				-.616	-.712
10.0				-.258				-.297			
12.0	-.166	-.262		-.313		-.305		-.312		-.577	-.186
16.0	-.182	-.224		-.246		-.265		-.251		-.362	-.174
20.0		-.080				-.091				-1.021	

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.788	-2.204	-1.907	-1.770	-1.567	-1.411	-1.300	-1.201	-1.094	-.983	-.757	-.5?2	-.317	-.166
LOWER SURFACE		.767		.516	.368	.240		.155		.072	.037	.046		.091

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-3.267	-2.424	-2.075	-1, 91	-1.647	-1.494	-1.387	-1.295	-1.191	-1.073	-.828	-.575	-.360	-.187
LOWER SURFACE		.797		.554	.410	.285		.143		.042	.027	.042		.105

TABLE XXXIII - Continued

(d) $M = 0.4$, $\alpha = -3.5$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.728					
-14.0		-.120				.132					
-10.5	-.100	-.207		-.168		-.147		-.161			
-8.5						-.390					
-6.0	.328	-.073	-.190	-.292				-.287	-.249	-.237	-.752
-3.0		-.765	-.519	-.457		-.424		-.484	-.454	-.115	
-1.5						-.449					
0		-.726	-.690	-.580				-.603	-.323	.321	
1.5						-.545					
2.0				-.700				-.660			
3.0		-.593	-.598		-.722	-.741	-.702		-.274	-.175	
4.0				-.445				-.550			
5.5						-.267					
6.0		-.403		-.223	-.141		-.138	-.210		-.529	
8.0				-.213				-.190			
9.0	-.230	-.285				-.152				-.572	-.628
10.0				-.252				-.294			
12.0	-.163	-.272		-.320		-.308		-.323		-.544	-.191
16.0	-.177	-.234		-.268		-.303		-.289		-.113	-.198
20.0		-.094				-.129				-.835	

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.022	-1.128	-1.104	-1.126	-1.105	-1.080	-1.058	-1.032	-.971	-.895	-.729	-.551	-.370	-.222
LOWER SURFACE		.014		-.231	-.381	-.456		-.357		-.314	-.251	-.168		.017

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.859	-1.009	-1.000	-1.013	-1.019	-1.018	-1.030	-1.028	-.990	-.931	-.782	-.604	-.435	-.279
LOWER SURFACE		.079		-.095	-.165	-.229		-.282		-.294	-.235	-.139		.047

TABLE XXXIII - Continued

(e) M = 0.4, α = 0.9 deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.721					
-14.0		-.098				.053					
-10.5	-.096	-.222		-.214		-.246		-.212			
-8.5						-.502					
-6.0	.277	-.209	-.312	-.410				-.409	-.376	-.249	-.926
-3.0		-.975	-.721	-.608		-.538		-.622	-.510	-.121	
-1.5						-.559					
0		-.910	-.832	-.715				-.729	-.341	.253	
1.5						-.645					
2.0				-.798				-.756			
3.0		-.694	-.688		-.818	-.825	-.785		-.283	-.183	
4.0				-.541				-.623			
5.5						-.297					
6.0		-.478		-.288	-.201		-.211	-.274		-.717	
8.0				-.260				-.229			
9.0	-.256	-.297				-.185				-.693	-.731
10.0				-.284				-.309			
12.0	[illegible]	-.292		-.339		-.339		-.336		-.632	-.203
16.0	[illegible]	-.246		-.270		-.314		-.288		-.252	-.202
20.0		-.104				-.134				-1.000	

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.975	-1.787	-1.626	-1.565	-1.440	-1.350	-1.274	-1.204	-1.111	-1.002	-.788	-.569	-.362	-.208
LOWER SURFACE		.457		.185	.021	-.089		-.116		-.124	-.123	-.079		.051

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.111	-1.834	-1.640	-1.550	-1.434	-1.357	-1.307	-1.257	-1.178	-1.085	-.873	-.656	-.448	-.268
LOWER SURFACE		.516		.261	.142	.044		-.071		-.127	-.114	-.053		.071

TABLE XXXIII - Continued

(f) M = 0.4, α = 5.3 deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.731					
-14.0		-.059				-.019					
-10.5	-.051	-.206		-.248		-.326		-.244			
-6.5						-.592					
-6.0	.129	-.335	-.436	-.526				-.518	-.510	-.236	-1.096
-3.0		-1.175	-.899	-.729		-.628		-.764	-.511	-.101	
-1.5						-.648					
0		-1.076	-.946	-.817				-.815	-.323	.127	
1.5						-.700					
2.0				-.868				-.824			
3.0		-.770	-.742		-.816	-.855	-.828		-.269	-.185	
4.0				-.578				-.678			
5.5						-.313					
6.0		-.478		-.331	-.236		-.245	-.297		-.887	
8.0				-.268				-.257			
9.0	-.240	-.292				-.185				-.789	-.789
10.0				-.286				-.318			
12.0	-.175	-.283		-.333		-.328		-.343		-.669	-.196
16.0	-.183	-.245		-.262		-.286		-.273		-.378	-.208
20.0		-.111				-.108				-1.202	

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-3.098	-2.441	-2.122	-1.950	-1.713	-1.540	-1.410	-1.304	-1.170	-1.037	-.778	-.531	-.326	-.173
LOWER SURFACE		.773		.533	.360	.236		.133		.065	.022	.025		.084

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-3.770	-2.714	-2.290	-2.068	-1.799	-1.639	-1.503	-1.399	-1.275	-1.139	-.862	-.584	-.346	-.204
LOWER SURFACE		.811		.563	.410	.287		.130		.036	.017	.030		.089

TABLE XXXIII - Continued

(g) $M = 0.6$, $\alpha = -2.4$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.764					
-14.0		-.110				.061					
-10.5	-.096	-.210		-.216		-.244		-.209			
-6.5						-.553					
-6.0	.357	-.116	-.262	-.418				-.407	-.333	-.275	-1.655
-3.0		-1.124	-.944	-.792		-.706		-.831	-.570	-.146	
-1.5						-.789					
0		-1.202	-1.134	-1.019				-1.177	-.362	.295	
1.5						-.872					
2.0				-1.055				-1.062			
3.0		-.876	-.893		-1.091	-1.092	-1.046		-.308	-.227	
4.0				-.697				-.767			
5.5						-.429					
6.0		-.550		-.424	-.367		.401	-.406		-.947	
8.0				-.320				-.296			
9.0	-.397	-.404				-.186				-1.238	-.905
10.0				-.341				-.360			
12.0	-.257	-.379		-.395		-.366		-.386		-.826	-.221
16.0	-.230	-.291		-.324		-.346		-.332		-.158	-.219
20.0		-.143				-.160				-1.319	

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.63'	-1.931	-1.996	-1.973	-1.967	-2.007	-1.382	-1.169	-1.055	-.988	-.826	-.673	-.515	-.430
LOWER SURFACE		.384		.112	-.076	-.204		-.196		-.213	-.210	-.147		.001

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.630	-1.959	-2.041	-2.059	-2.040	-1.987	-2.025	-2.073	-1.265	-1.086	-.913	-.679	-.464	-.293
LOWER SURFACE		.461		.205	.070	-.039		-.159		-.221	-.197	-.123		.045

TABLE XXXIII - Concluded

(h) $M = 0.6$, $\alpha = 1.0$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.769					
-14.0		-.137				.096					
-10.5	-.120	-.240		-.210		-.215		-.196			
-6.5						-.490					
-6.0	.358	-.076	-.215	-.364				-.356	-.277	-.275	-1.187
-3.0		-.962	-.788	-.669		-.610		-.715	-.562	-.148	
-1.5						-.680					
0		-1.122	-1.069	-.912				-.946	-.380	.363	
1.5						-.798					
2.0				-1.011				-.975			
3.0		-.818	-.846		-1.027	-1.061	-.987		-.302	-.229	
4.0				-.660				-.756			
5.5						-.371					
6.0		-.512		-.369	-.336		-.346	-.348		-.808	
8.0				-.308				-.290			
9.0	-.329	-.379				-.178				-.968	-.895
10.0				-.330				-.362			
12.0	-.265	-.360		-.393		-.370		-.393		-.793	-.220
16.0	-.227	-.288		-.332		-.352		-.344		-.098	-.230
20.0		-.151				-.164				-1.106	

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.272	-1.599	-1.549	-1.571	-1.680	-1.681	-1.441	-1.336	-1.140	-.944	-.757	-.617	-.506	-.402
LOWER SURFACE		.171		-.100	-.295	-.410		-.346		-.332	-.280	-.205		-.017

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.151	-1.522	-1.488	-1.496	-1.592	-1.558	-1.665	-1.669	-1.362	-1.206	-.951	-.704	-.487	-.307
LOWER SURFACE		.247		.027	-.093	-.189		-.288		-.323	-.268	-.166		.030

TABLE XXXIV. PRESSURE COEFFICIENTS MEASURED ON CONFIGURATION FWP_1H_3 AT VARIOUS MACH NUMBERS AND ANGLES OF ATTACK

(a) $M = 0.2$, $\alpha = -3.5$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.684					
-14.0		-.117				.123					
-10.5	-.112	-.135		-.108		-.063		-.119			
-6.5						-.211					
-6.0	.330	-.070	-.161	-.188				-.197	-.168	-.066	.30'
-3.0		-.704	-.457	-.431		-.391		-.427	-.461	-.690	
-1.5						-.387					
0		-.739	-.086	-.674				-.725	-.785	-.850	
1.5						-1.054					
2.0				-.827				-.770			
3.0		-.650	-.632		-.787	-.736	-.681		-.621	-.669	
4.0				-.481				-.592			
5.5						-.505					
6.0		-.450		-.283	-.310		-.352	-.241		-.441	
8.0				-.219				-.250			
9.0	-.230	-.290				-.241				-.360	.303
10.0				-.215				-.295			
12.0	-.143	-.272		-.241		-.230		-.235		-.327	-.151
16.0	-.179	-.186		-.228		-.237		-.225		-.194	-.145
20.0		-.079				-.128				-.047	

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.943	-1.049	-1.035	-1.027	-1.042	-1.042	-1.006	-.972	-.924	-.880	-.721	-.537	-.364	-.233
LOWER SURFACE		-.004		-.207	-.340	-.436		-.347		-.257	-.238	-.163		.032

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.866	-1.003	-.986	-.965	-.962	-.979	-.994	-.974	-.948	-.907	-.726	-.566	-.436	-.284
LOWER SURFACE		.112		-.050	-.151	-.209		-.250		-.262	-.214	-.105		.054

TABLE XXXIV - Continued

(b) M = 0.2, α = 0.8 deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.669					
-14.0		-.095				.043					
-10.5	-.066	-.155		-.126		-.121		-.144			
-8.5						-.310					
-6.0	.209	-.202	-.237	-.289				-.262	-.251	-.212	.207
-3.0		-.836	-.571	-.504		-.335		-.504	-.622	-.923	
-1.5						-.433					
0		-.854	-.075	-.756				-.823	-.840	-.937	
1.5						-1.398					
2.0				-.869				-.652			
3.0		-.756	-.729		-.791	-.711	[illegible]		-.673	-.687	
4.0				-.591				-.654			
5.5						-.533					
6.0		-.507		-.348	-.338		-.371	-.293		-.558	
8.0				-.304				-.280			
9.0	-.259	-.302				-.242				-.433	.535
10.0				-.253				-.311			
12.0	.191	-.273		-.326		-.288		-.213		-.250	-.143
16.0	-.168	-.179		-.230		-.206		-.257		-.161	-.172
20.0		-.077				-.137				-.158	

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.778	-1.578	-1.445	-1.387	-1.310	-1.233	-1.180	-1.122	-1.074	-.956	-.756	-.554	-.380	-.221
LOWER SURFACE		.453		.188	.015	-.086		-.070		-.091	-.106	-.055		.070

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.980	-1.705	-1.532	-1.392	-1.320	-1.238	-1.175	-1.144	-1.086	-1.004	-.309	-.612	-.421	-.248
LOWER SURFACE		.547		.272	.145	.080		-.031		-.115	-.101	-.029		.085

TABLE XXXIV - Continued

(c) $M = 0.2$, $\alpha = 5.1$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	50	90	100	120	135	150	180
-16.0						.677					
-14.0		-.041				-.025					
-10.5	-.058	-.171		-.158		-.216		-.200			
-6.5						-.355					
-6.0	.178	-.284	-.334	-.349				-.325	-.343	-.304	.087
-3.0		-1.021	-.681	-.581		-.380		-.563	-.712	-1.023	
-1.5						-.376					
0		-.996	-.052	-.825				-.859	-.888	-1.019	
1.5						-1.349					
2.0				-.935				-.913			
3.0		-.782	-.746		-.850	-.830	-.884		-.717	-.760	
4.0				-.600				-.728			
5.5						-.513					
6.0		-.550		-.379	-.412		-.367	-.280		-.583	
8.0				-.297				-.273			
9.0	-.244	-.298				-.230				-.403	.740
10.0				-.273				-.336			
12.0	-.198	-.293		-.329		-.323		-.282		-.276	-.145
16.0	-.176	-.196		-.248		-.264		-.203		-.173	-.200
20.0		-.102				-.129				-.161	

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.681	-2.154	-1.848	-1.717	-1.560	-1.417	-1.316	-1.228	-1.137	-1.011	-.763	-.539	-.350	-.181
LOWER SURFACE		.766		.537	.339	.222		.160		.091	.024	.034		.113

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-3.282	-2.392	-2.058	-1.884	-1.665	-1.498	-1.376	-1.288	-1.200	-1.090	-.811	-.567	-.350	-.190
LOWER SURFACE		.824		.566	.420	.294		.153		.034	.015	.055		.113

TABLE XXXIV - Continued

(d) $M = 0.4$, $\alpha = -3.5$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.685					
-14.0		-.148				.115					
-10.5	-.114	-.193		-.121		-.007		-.133			
-6.5						-.217					
-4.0	.350	-.049	-.137	-.198				-.192	-.183	-.061	.352
-3.0		-.785	-.502	-.416		-.368		-.402	-.484	-.775	
-1.5						-.434					
0		-.945	-.117	-.755				-.753	-.816	-.874	
1.5						-1.248					
2.0				-.889				-.827			
3.0		-.780	-.773		-.972	-.756	-.789		-.755	-.752	
4.0				-.613				-.708			
5.5						-.510					
6.0		-.537		-.360	-.419		-.503	-.339		-.591	
8.0				-.356				-.287			
9.0	-.295	-.330				-.290				-.375	.599
10.0				-.314				-.341			
12.0	-.214	-.310		-.306		-.275		-.249		-.267	[illegible]
14.0	-.183	-.208		-.222		-.236		-.252		-.226	-.198
20.0		-.117				-.147				-.151	

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.800	-1.000	-1.044	-1.090	-1.108	-1.101	-1.102	-1.090	-1.027	-.951	-.775	-.590	-.411	-.253
LOWER SURFACE		-.054		-.286	-.439	-.522		-.374		-.313	-.274	-.194		.002

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.953	-1.001	-.996	-1.014	-1.031	-1.035	-1.045	-1.049	-1.013	-.963	-.815	-.635	-.455	-.300
LOWER SURFACE		.077		-.115	-.204	-.263		-.312		-.305	-.246	-.149		.033

TABLE XXXIV - Continued

(e) M = 0.4, α = 0.8 deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.676					
-14.0		-.134				.039					
-10.5	-.095	-.185		-.152		-.178		-.159			
-8.5						-.267					
-6.0	.314	-.140	-.226	-.274				-.244	-.258	-.142	.323
-3.0		-.926	-.617	-.480		-.312		-.504	-.599	-.913	
-1.5						-.419					
0		-1.005	-.096	[illegible]				-.923	-.929	-1.056	
1.5						-1.400					
2.0				-.959				-.956			
3.0		-.837	-.857		-.914	-.811	-.845		-.824	-.850	
4.0				-.686				-.768			
5.5						-.614					
6.0		-.568		-.449	-.536		-.570	-.385		-.603	
7.0				-.367				-.368			
9.0	-.305	-.360				-.315				-.381	.687
10.0				-.333				-.369			
12.0	-.213	-.310		-.366		-.259		-.310		-.296	-.199
16.0	-.176	-.201		-.235		-.238		-.256		-.240	-.178
20.0		-.131				-.151				-.124	

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.735	-1.602	-1.499	-1.451	-1.373	-1.307	-1.270	-1.204	-1.111	-1.005	-.822	-.616	-.413	-.253
LOWER SURFACE		.403		.141	-.028	-.148		-.132		-.118	-.138	-.087		.046

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.025	-1.779	-1.617	-1.514	-1.411	-1.339	-1.289	-1.243	-1.170	-1.087	-.878	-.653	-.444	-.260
LOWER SURFACE		.514		.267	.120	.025		-.087		-.143	-.120	-.060		.063

TABLE XXXIV - Continued

(f) $M = 0.4$, $\alpha = 5.2$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.667					
-14.0		-.388				-.026					
-10.5	-.054	-.172		-.179		-.244		-.196			
-6.5						-.348					
-6.0	.220	-.260	-.324	-.349				-.314	-.330	-.253	.197
-3.0		-1.118	-.742	-.542		-.301		-.545	-.731	-1.103	
-1.5						-.423					
0		-1.073	-.086	-.873				-.989	-.985	-1.162	
1.5						-1.278					
2.0				-1.006				-.992			
3.0		-.933	-.919		-.890	-.874	-.947		-.893	-.987	
4.0				-.699				-.822			
5.5						-.636					
6.0		-.593		-.487	-.587		-.622	-.466		-.643	
8.0				-.422				-.398			
9.0	-.124	-.385				-.466				-.432	.774
10.0				-.380				-.435			
12.0	-.236	-.324		-.345		-.312		-.334		-.313	-.213
16.0	-.216	-.254		-.287		-.238		-.334		-.238	-.237
20.0		-.145				-.153				-.167	

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.702	-2.211	-1.936	-1.817	-1.615	-1.480	-1.364	-1.284	-1.159	-1.044	-.833	-.605	-.411	-.269
LOWER SURFACE		.720		.480	.315	.186		.116		.056	-.017	.018		.076

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-3.644	-2.565	-2.217	-2.019	-1.789	-1.613	-1.490	-1.402	-1.275	-1.151	-.879	-.605	-.361	-.208
LOWER SURFACE		.797		.543	.386	.270		.107		.020	.002	.017		.087

TABLE XXXIV - Continued

(g) $M = 0.6$, $\alpha = -3.5$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.714					
-14.0		-.171				.128					
-10.5	-.121	-.198		-.115		-.098		-.131			
-6.5						-.166					
-6.0	.397	.050	-.049	-.114				-.134	-.055	.042	.417
-3.0		-.692	-.438	-.304		-.190		-.244	-.432	-.650	
-1.5						-.179					
0		-.984	-.303	-.784				-.814	-.942	-1.025	
1.5						-.821					
2.0				-.991				-1.025			
3.0		-.932	-.826		-.750	-.806	-.797		-.907	-.921	
4.0				-.640				-.788			
5.5						-.767					
6.0		-.718		-.579	-.804		-.781	-.661		-.737	
8.0				-.620				-.621			
9.0	-.440	-.507				-.584				-.571	.473
10.0				-.536				-.549			
12.0	-.290	-.408		-.456		-.387		-.442		-.403	-.333
16.0	-.214	-.276		-.280		-.265		-.296		-.319	-.245
20.0		-.216				-.207				-.225	

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.607	-.916	-.974	-1.072	-1.177	-1.239	-1.290	-1.306	-1.155	-1.002	-.795	-.665	-.535	-.440
LOWER SURFACE		-.175		-.433	-.635	-.742		-.546		-.442	-.384	-.297		-.083

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.575	-.935	-1.014	-1.093	-1.202	-1.276	-1.343	-1.435	-1.351	-1.240	-.971	-.732	-.518	-.346
LOWER SURFACE		-.054		-.234	-.328	-.396		-.456		-.459	-.370	-.238		-.010

TABLE XXXIV - Concluded

(h) M = 0.6, α = 0.9 deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.698					
-14.0		-.146				.943					
-10.5	-.091	-.167		-.129		-.153		-.148			
-6.5						-.233					
-6.0	.386	-.029	-.117	-.174				-.153	-.142	-.018	.390
-3.0		-.234	-.573	-.350		-.200		-.435	-.557	-.868	
-1.5						-.196					
0		-1.130	-.381	-.847				-.981	-1.050	-1.203	
1.5						-.895					
2.0				-1.031				-1.060			
3.0		-.936	-.884		-.780	-.771	-.849		-.907	-.958	
4.0				-.682				-.751			
5.5						-.833					
6.0		-.761		-.666	-.914		-.784	-.676		-.903	
8.0				-.739				-.718			
9.0	-.624	-.614				-.758				-.619	.599
10.0				-.639				-.663			
12.0	-.406	-.543		-.482		-.489		-.512		-.477	-.366
16.0	-.284	-.402		-.344		-.326		-.320		-.371	-.276
20.0		-.251				-.240				-.247	

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.327	-1.530	-1.435	-1.457	-1.456	-1.484	-1.368	-1.233	-1.053	-.928	-.750	-.692	-.635	-.557
LOWER SURFACE		.285		.017	-.168	-.303		-.248		-.254	-.267	-.218		-.072

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.496	-1.844	-1.913	-1.897	-1.735	-1.724	-1.807	-1.847	-1.359	-1.219	-.986	-.737	-.576	-.342
LOWER SURFACE		.406		.156	.020	-.083		-.207		-.264	-.244	-.162		.026

TABLE XXXV. PRESSURE COEFFICIENTS MEASURED ON CONFIGURATION FWP_1F_R AT VARIOUS MACH NUMBERS AND ANGLES OF ATTACK

(a) $M = 0.2$, $\alpha = -3.5$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.711					
-14.0		-.094				.152					
-10.5	-.103	-.107		-.043		.081		-.034			
-6.5						.585					
-6.0	.298	-.068	-.166	-.155				-.055	-.084	-.002	.343
-3.0		-.979	-.780	-1.050				-.858	-.598	-.728	
-1.5											
0		-1.175	-1.085	-1.283				-.935	-.868	-.920	
1.5											
2.0				-1.089				-.828			
3.0		-.811	-.895						-.586	-.670	
4.0				-.599				-.545			
5.5						-.283					
6.0		-.463		-.334	-.513		-.379	-.351		-.391	
8.0				-.252				-.079			
9.0	-.228	-.284				-.148				-.287	.365
10.0				-.222				-.053			
12.0	-.135	-.228		-.215		.048		-.265		-.234	-.063
16.0	-.189	-.187		-.263		-.144		-.221		-.121	-.033
20.0		-.116				-.172				-.028	

RIGID FAIRING BASE

HEIGHT ABOVE FUSELAGE (IN)	AZIMUTH (DEG) , 0=FORWARD , 90=RIGHT SIDE 0	30	60	90	120	150	180	210	240	270	300	330
5.38		-1.774	-1.216	-1.234	-1.173	-.668		-.415	-.845	-.823	-1.037	-1.247
6.16	1.041	-.544	-1.592	-1.612	-1.117	-.754	-.476	-.532	-.804	-1.381	-1.519	-.372

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.047	-1.185	-1.173	-1.193	-1.218	-1.232	-1.198	-1.153	-1.082	-.980	-.777	-.567	-.364	-.235
LOWER SURFACE		-.027		-.250	-.369	-.453		-.344		-.262	-.240	-.163		.032

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.970	-1.074	-1.047	-1.035	-1.030	-1.044	-1.052	-1.030	-1.002	-.960	-.770	-.601	-.463	-.297
LOWER SURFACE		.129		-.055	-.156	-.210		-.243		-.255	-.206	-.104		.064

TABLE XXXV - Continued

(b) M = 0.2, α = 0.8 deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.688					
-14.0		-.058				.101					
-10.5	-.069	-.117		-.058		.009		-.062			
-6.5						.611					
-6.0	.282	-.141	-.226	-.128				-.043	-.150	-.081	.290
-3.0		-1.100	-.823	-1.174				-1.019	-.709	-.889	
-1.5											
0		-1.231	-1.109	-1.294				-.982	-.917	-1.015	
1.5											
2.0				-1.238				-1.028			
3.0		-.915	-.850						-.666	-.685	
4.0				-.514				-.547			
5.5						-.561					
6.0		-.520		-.342	-.450		-.337	-.291		-.461	
8.0				-.302				-.119			
9.0	-.213	-.270				-.169				-.282	.587
10.0				-.317				-.145			
12.0	-.152	-.213		-.219		-.043		-.160		-.208	-.007
16.0	-.139	-.171		-.143		-.163		-.160		-.092	-.076
20.0		-.100				-.145				-.087	

RIGID FAIRING BASE

HEIGHT ABOVE FUSELAGE (IN)	AZIMUTH (DEG) , 0=FORWARD , 90=RIGHT SIDE 0	30	60	90	120	150	180	210	240	270	300	330
5.38		-1.570	-1.308	-1.312	-1.264	-.563		-.803	-.899	-.991	-1.107	-1.216
6.16	1.015	-.469	-1.773	-1.674	-.897	-.613	-.491	-.397	-.819	-1.035	-1.295	-.004

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.823	-1.668	-1.541	-1.504	-1.460	-1.355	-1.293	-1.239	-1.168	-1.041	-.786	-.553	-.384	-.177
LOWER SURFACE		.436		.176	.009	-.089		-.062		-.077	-.101	-.052		.092

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.034	-1.742	-1.600	-1.440	-1.367	-1.259	-1.207	-1.173	-1.134	-1.036	-.827	-.614	-.435	-.266
LOWER SURFACE		.553		.301	.161	.070		-.033		-.111	-.082	-.023		.097

TABLE XXXV - Continued

(c) M = 0.2, α = 5.2 deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.703					
-14.0		-.056				.037					
-10.5	-.043	-.136		-.080		-.026		-.050			
-6.5						.570					
-6.0	.156	-.241	-.234	-.169				-.052	-.182	-.211	.262
-3.0		-1.216	-.926	-1.034				-1.025	-.750	-.963	
-1.5											
0		-1.357	-1.229	-1.310				-1.023	-1.078	-1.132	
1.5											
2.0				-1.368				-.778			
3.0		-.956	-.937						-.804	-.811	
4.0				-.629				-.561			
5.5						-.455					
6.0		-.535		-.399	-.638		-.494	-.356		-.557	
8.0				-.368				-.098			
9.0	-.230	-.312				-.234				-.285	.742
10.0				-.221				-.160			
12.0	-.163	-.225		-.173		-.095		-.312		-.227	-.114
16.0	-.130	-.175		-.260		-.137		-.219		-.175	-.120
20.0		-.091				-.100				-.068	

RIGID FAIRING BASE

HEIGHT ABOVE FUSELAGE (IN)	AZIMUTH (DEG) , 0=FORWARD , 90=RIGHT SIDE 0	30	60	90	120	150	180	210	240	270	300	330
5.38		-1.546	-1.407	-1.386	-1.223	-.598		-.407	-.982	-.938	-1.243	-1.069
6.16	.098	-.307	-1.405	-1.894	-1.723	-.741	-.487	-.620	-.637	-1.344	-1.490	-.333

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.768	-2.219	-2.002	-1.861	-1.694	-1.575	-1.462	-1.396	-1.250	-1.122	-.829	-.563	-.319	-.161
LOWER SURFACE		.724		.499	.344	.226		.130		.083	.029	.056		.088

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-3.352	-2.421	-2.125	-1.930	-1.706	-1.529	-1.435	-1.341	-1.228	-1.110	-.873	-.597	-.351	-.181
LOWER SURFACE		.820		.573	.418	.312		.140		.053	.024	.036		.093

TABLE XXXV - Continued

(d) M = 0.4, α = -3.5 deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	00	90	100	120	135	150	180
-16.0						.690					
-14.0		-.148				.148					
-10.5	-.108	-.152		-.067		.037		-.044			
-6.5						.588					
-6.0	.327	-.033	-.130	-.119				-.035	-.116	-.001	.358
-3.0		-1.008	-.821	-1.115				-1.072	-.652	-.813	
-1.5											
0		-1.288	-1.089	-1.261				-1.081	-.977	-1.054	
1.5											
2.0				-1.140				-.861			
3.0		-.906	-.902						-.758	-.834	
4.0				-.619				-.588			
5.5						-.500					
6.0		-.555		-.491	-.471		-.573	-.503		-.564	
8.0				-.445				-.285			
9.0	-.268	-.305				-.211				-.361	.314
10.0				-.386				-.259			
12.0	-.181	-.258		-.238		-.115		-.219		-.253	-.141
16.0	-.135	-.186		-.227		-.161		-.225		-.198	-.117
20.0		-.159				-.164				-.101	

RIGID FAIRING BASE

HEIGHT ABOVE FUSELAGE (IN.)	AZIMUTH (DEG) , 0=FORWARD , 90=RIGHT SIDE 0	30	60	90	120	150	180	210	240	270	300	330
5.38		-1.732	-1.338	-1.248	-1.109	-.689		-.616	-.939	-1.032	-1.197	-1.335
6.16	1.009	-.489	-1.749	-1.407	-.888	-.727	-.548	-.850	-.717	-1.303	-1.755	-.445

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.973	-1.157	-1.191	-1.239	-1.285	-1.276	-1.289	-1.241	-1.166	-1.050	-.833	-.596	-.388	-.248
LOWER SURFACE		-.101		-.333	-.479	-.552		-.384		-.326	-.292	-.215		-.008

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.912	-1.079	-1.087	-1.104	-1.123	-1.127	-1.131	-1.131	-1.100	-1.046	-.874	-.681	-.486	-.323
LOWER SURFACE		.065		-.119	-.217	-.267		-.315		-.312	-.259	-.157		.031

TABLE XXXV - Continued

(e) $M = 0.4$, $\alpha = 0.9$ deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.683					
-14.0		-.117				.084					
-10.5	-.081	-.152		-.069		-.020		-.058			
-6.5						.647					
-6.0	.303	-.110	-.154	-.066				-.005	-.089	-.071	.323
-3.0		-1.171	-.949	-1.181				-1.018	-.784	-1.011	
-1.5											
0		-1.461	-1.339	-1.286				-1.059	-1.131	-1.211	
1.5											
2.0				-1.192				-1.069			
3.0		-.967	-.956						-.865	-.883	
4.0				-.527				-.709			
5.5						-.557					
6.0		-.611		-.567	-.551		-.556	-.574		-.652	
8.0				-.442				-.438			
9.0	-.299	-.352				-.312				-.460	.490
10.0				-.393				-.320			
12.0	-.230	-.283		-.273		-.121		-.259		-.265	-.118
16.0	-.169	-.188		-.279		-.119		-.192		-.196	-.134
20.0		-.174				-.127				-.134	

RIGID FAIRING BASE

HEIGHT ABOVE FUSELAGE (IN)	AZIMUTH (DEG) , 0=FORWARD , 90=RIGHT SIDE 0	30	60	90	120	150	180	210	240	270	300	330
5.38		-1.541	-1.406	-1.366	-1.164	-.593		-.549	-.920	-1.162	-1.269	-1.172
6.16	1.011	-.358	-1.737	-1.393	-.909	-.663	-.585	-.766	-.638	-1.119	-1.292	-.055

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.849	-1.769	-1.659	-1.642	-1.608	-1.532	-1.466	-1.406	-1.281	-1.149	-.862	-.583	-.412	-.278
LOWER SURFACE		.369		.107	-.063	-.165		-.138		-.130	-.151	-.099		.244

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.138	-1.864	-1.689	-1.587	-1.482	-1.426	-1.360	-1.325	-1.240	-1.149	-.918	-.681	-.476	-.204
LOWER SURFACE		.513		.260	.116	.022		-.094		-.152	-.131	-.066		.061

TABLE XXXV - Continued

(f) M = 0.4, α = 5.2 deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.674					
-14.0		-.074				.007					
-10.5	-.034	-.123		-.079		-.064		-.093			
-6.5						.556					
-6.0	.242	-.181	-.199	-.052				.005	-.179	-.143	.279
-3.0		-1.282	-1.002	-1.078				-.954	-.863	-1.093	
-1.5											
0		-1.545	-1.371	-1.399				-1.192	-1.258	-1.230	
1.5											
2.0				-1.216				-.957			
3.0		-1.052	-1.052						-.954	-.985	
4.0				-.558				-.710			
5.5						-.555					
6.0		-.709		-.594	-.698		-.636	-.611		-.738	
8.0				-.381				-.422			
9.0	-.302	-.426				-.304				-.414	.597
10.0				-.387				-.326			
12.0	-.216	-.289		-.348		-.179		-.302		-.261	-.171
16.0	-.101	-.196		-.261		-.148		-.194		-.229	-.177
20.0		-.150				-.180				-.133	

RIGID FAIRING BASE

HEIGHT ABOVE FUSELAGE (IN)	AZIMUTH (DEG) , 0=FORWARD , 90=RIGHT SIDE 0	30	60	90	120	150	180	210	240	270	300	330
5.38		-1.327	-1.508	-1.436	-1.192	-.563		-.768	-1.071	-1.068	-1.317	-1.109
6.16	1.031	-.164	-1.644	-1.527	-.931	-.817	-.549	-1.027	-.863	-.962	-1.309	.056

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.834	-2.359	-2.094	-2.003	-1.821	-1.720	-1.581	-1.495	-1.342	-1.171	-.834	-.540	-.378	-.280
LOWER SURFACE		.698		.450	.296	.172		.111		.052	-.019	.017		.079

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-3.742	-2.668	-2.303	-2.104	-1.862	-1.692	-1.570	-1.467	-1.331	-1.200	-.911	-.630	-.377	-.223
LOWER SURFACE		.806		.547	.377	.264		.107		.008	-.006	.018		.081

TABLE XXXV - Concluded

(g) M = 0.6, α = 0.9 deg

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.758					
-14.0		-.061				.130					
-10.5	-.020	-.078		-.002		.040		-.019			
-6.5						.661					
-6.0	.451	.126	.082	.144				.130	.054	.110	.451
-3.0		-.684	-.528	-.710				-.808	-.588	-.871	
-1.5											
0		-1.218	-1.021	-.976				-1.153	-1.245	-1.319	
1.5											
2.0				-1.017				-1.236			
3.0		-1.012	-.945						-1.094	-1.065	
4.0				-.631				-1.002			
5.5						-.909					
6.0		-.920		-.762	-.870		-.950	-.812		-.907	
8.0				-.797				-.752			
9.0	-.656	-.684				-.708				-.729	.250
10.0				-.692				-.707			
12.0	-.512	-.595		-.546		-.551		-.536		-.537	-.545
16.0	-.295	-.344		-.444		-.349		-.389		-.388	-.331
20.0		-.250				-.236				-.272	

RIGID FAIRING BASE

HEIGHT ABOVE FUSELAGE (IN)	AZIMUTH (DEG) , 0=FORWARD , 90=RIGHT SIDE 0	30	60	90	120	150	180	210	240	270	300	330
5.38		-.894	-.954	-.985	-.874	-.714		-1.055	-1.139	-1.123	-1.156	-.882
6.16	1.065	.060	1.045	-.947	-.839	-.790	-.903	-1.041	-1.006	-1.162	-1.104	.059

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.953	-1.174	-1.176	-1.234	-1.331	-1.393	-1.351	-1.288	-1.104	-.985	-.862	-.773	-.719	-.643
LOWER SURFACE		.146		-.096	-.265	-.392		-.320		-.299	-.317	-.234		-.068

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.321	-1.707	-1.657	-1.581	-1.618	-1.670	-1.691	-1.753	-1.788	-1.231	-1.010	-.775	-.557	-.375
LOWER SURFACE		.357		.117	-.020	-.116		-.234		-.283	-.255	-.168		.003

TABLE XXXVI. PRESSURE COEFFICIENTS MEASURED ON CONFIGURATION FWP_2BLCF_f AT VARIOUS MACH NUMBERS AND ANGLES OF ATTACK

(a) $M = 0.2$, $\alpha = -3.5$ deg, $f_n = 0$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.648					
-14.0		-.053				.160				-.080	
-10.5	-.135	-.098		.040		.159		.026		-.058	-.043
-6.0	.311	-.132		-.085		.248		-.062		-.062	.399
-3.0		-.495	-.385	-.537				-.516	-.367	-.408	
-1.5		-.811								-.404	
0		-.780	-.766						-.623	-.718	
1.5		-.798								-.628	
3.0		-.780	-.851	-.523				-.643	-.435	-.750	
4.5		-.927								-.564	
6.0		-1.024	-.897	-.720				-.634	-.489	-.632	
7.5		-.811		-.867				-.965		-.691	
9.0	-.440	-.207		-.677				-.845		-.582	-.274
10.5		-.738		-.463				-.562		-.469	
12.0	-.105	-.433		-.521		.463		-.451		-.636	-.251
15.0	-.067	-.418		-.227		.114		-.254		-.340	-.168
20.0		-.293				-.128				-.238	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	120
1.042	-.247	-1.456	-.566
	-.077	-1.364	-.466

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-.672	-.714	-.704	-.714	LEFT
-.741	-.719	-.775	-.899	RIGHT

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.741	-.022	-.972	-.999	-1.058	-1.084	-1.091	-1.106	-1.032	-.965	-.818	-.646	-.423	-.199
LOWER SURFACE		-.101		-.354	-.542	-.613		-.368		-.313	-.273	-.161		.032

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.894	-1.098	-1.008	-1.022	-1.020	-1.015	-1.041	-1.037	-1.006	-.946	-.777	-.622	-.451	-.289
LOWER SURFACE		.087		-.198	-.194	-.230		-.263		-.273	-.235	-.130		.034

TABLE XXXVI - Continued

(b) $M = 0.2$, $\alpha = 0.9$ deg, $f\mu = 0\ ft^2$

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.630					
-14.0		-.076				.103				-.043	
-10.5	-.076	-.076		.024		.119		.038		-.031	.017
-6.0	.264	-.121		-.069		.284		-.002		-.107	.292
-3.0		-.557	-.453	-.475				-.536	-.377	-.472	
-1.5		-.811								-.747	
0		-.957	-.867						-.766	-.776	
1.5		-.912								-.726	
3.0		-1.099	-.793	-.979				-.670	-.927	-.713	
4.5		-1.088								-.686	
6.0		-.646	-1.249	-.735				-.668	-.869	-.730	
7.5		-.708		-.836				-.809		-.692	
9.0	-.266	-.646		-.435				-.894		-.321	-.287
10.5		-.282		-.583				-.217		-.326	
12.0	-.128	-.472		-.143		.798		-.358		-.439	-.160
16.0	-.127	-.319		-.235		.047		-.165		-.402	-.055
20.0		-.347				-.121				-.187	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	100
1.004	-.200	-1.542	-.692
	.001	-1.303	-.719

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-.652	-.914	-1.028	-.793	LEFT
-.704	-.675	-.744	-.639	RIGHT

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.456	-1.396	-1.350	-1.321	-1.316	-1.259	-1.266	-1.244	-1.129	-1.037	-.908	-.615	-.384	-.206
LOWER SURFACE		.301		.061	-.117	-.230		-.198		-.127	-.120	-.067		.044

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.972	-1.730	-1.573	-1.456	-1.369	-1.273	-1.235	-1.194	-1.138	-1.059	-.862	-.643	-.434	-.271
LOWER SURFACE		.484		.251	.135	.046		-.062		-.134	-.103	-.043		.078

TABLE XXXVI - Continued

(c) $M = 0.2$, $\alpha = 5.2$ deg, $f\mu = 0$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.610					
-14.0		.039				.035				-.013	
-10.5	-.029	-.028		.048		.112		.019		-.002	.009
-6.0	.159	-.185		-.028		.295		.005		-.144	.202
-3.0		-.682	-.562	-.560				-.566	-.496	-.527	
-1.5		-.952								-.726	
0		-.938	-.949						-.993	-.836	
1.5		-.945								-.762	
3.0		-1.053	-.832	-.557				-.793	-.541	-.708	
4.5		-.968								-.780	
6.0		-.800	-.908	-.827				-.904	-.725	-.510	
7.5		-.406		-1.101				-1.058		-.327	
9.0	-.416	-.567		-.977				-1.036		-.480	-.315
10.5		-.680		-.753				-.850		-.598	
12.0	-.031	-.506		-.343		.643		-.275		-.378	-.179
16.0	-.060	-.655		-.621		.021		-.282		-.229	-.107
20.0		-.278				-.042				-.200	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	100
1.051	-.274	-1.513	-.571
	-.025	-1.273	-.689

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-.725	-.911	-.775	-.913	LEFT
-.659	-.609	-.870	-.992	RIGHT

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.181	-1.836	-1.636	-1.574	-1.500	-1.372	-1.303	-1.234	-1.148	-1.072	-.841	-.565	-.334	-.237
LOWER SURFACE		.622		.387	.227	.101		.101		.049	.001	.039		.080

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-3.249	-2.397	-2.040	-1.890	-1.681	-1.533	-1.398	-1.324	-1.227	-1.124	-.836	-.570	-.351	-.194
LOWER SURFACE		.793		.539	.377	.284		.118		.027	.001	.046		.092

TABLE XXXVI - Continued

(d) $M = 0.2$, $\alpha = -3.5$ deg, $f\mu = 4.2$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.649					
-14.0		-.091				.167				-.085	
-10.5	-.181	-.166		-.021		.109		.012		-.082	-.063
-6.0	.210	-.269		-.301		.127		-.163		70	.297
-3.0		-1.010	-.945	-1.082				-.771	-.715	-.688	
-1.5		-1.438								-.956	
0		-1.580	-1.894						-1.375	-1.022	
1.5		-1.423								-1.015	
3.0		-1.182	-1.175	-1.540				-.629	-.667	-.778	
4.5		-.920								-.566	
6.0		-.619	-.577	-.713				-.415	-.474	-.503	
7.5		-.409		-.329				-.340		-.358	
9.0	-.240	-.218		-.169				-.198		-.264	-.269
10.5		-.148		-.074				-.182		-.120	
12.0	-.042	-.101		-.065		-.039		-.110		-.140	-.101
16.0	-.083	-.188		-.175		-.193		-.186		-.077	-.020
20.0		-.139				-.101				-.074	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD

0	30	60	100
1.032	-.787	-3.071	-5.939
	-.208	-2.273	-4.383

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-1.398	-.979	-.534	-.295	LEFT
-.440	-.483	-.314	-.419	RIGHT

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.237	-1.380	-1.407	-1.450	-1.486	-1.488	-1.438	-1.385	-1.294	-1.168	-.881	-.631	-.394	-.194
LOWER SURFACE		.021		-.260	-.451	-.547		-.318		-.289	-.260	-.146		.031

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.070	-1.182	-1.139	-1.149	-1.137	-1.142	-1.134	-1.130	-1.089	-1.034	-.841	-.657	-.475	-.306
LOWER SURFACE		.136		-.072	-.151	-.198		-.260		-.282	-.217	-.112		.043

TABLE XXXVI - Continued

(e) $M = 0.2$, $\alpha = 0.9$ deg, $f\mu = 4.2$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.634					
-14.0		-.061				.069				-.054	
-10.5	-.149	-.140		-.014		.055		.017		-.077	.049
-6.0	.174	-.721		-.280		.151		-.140		-.213	.208
-3.0		-1.117	-1.061	-1.119				-.779	-.752	-.777	
-1.5		-1.544								-1.135	
0		-1.705	-2.046						-1.538	-1.182	
1.5		-1.589								-1.036	
3.0		-1.236	-1.296	-1.468				-.669	-.761	-.860	
4.5		-.933								-.714	
6.0		-.699	-.700	-.636				-.550	-.494	-.501	
7.5		-.495		-.430				-.432		-.387	
9.0	-.290	-.276		-.195				-.271		-.277	-.257
10.5		-.196		-.155				-.289		-.192	
12.0	-.128	-.146		-.090		-.086		-.144		-.190	-.073
16.0	-.101	-.195		-.153		-.171		-.140		-.145	-.038
20.0		-.167				-.090				-.042	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	100
1.062	-.801	-3.193	-5.978
	-.165	-2.377	-4.542

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-1.348	-1.119	-.642	-.472	LEFT
-.468	-.624	-.448	-.466	RIGHT

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.090	-1.925	-1.802	-1.790	-1.742	-1.675	-1.624	-1.516	-1.387	-1.240	-.921	-.604	-.385	-.265
LOWER SURFACE		.402		.126	-.056	-.186		-.109		-.114	-.126	-.066		.047

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.210	-1.953	-1.723	-1.584	-1.476	-1.420	-1.360	-1.295	-1.226	-1.149	-.923	-.681	-.477	-.287
LOWER SURFACE		.537		.292	.157	.045		-.073		-.119	-.102	-.047		.059

TABLE XXXVI - Continued

(f) $M = 0.2$, $\alpha = 5.2$ deg, $f\mu = 4.2$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.610					
-14.0		-.020				.010				-.023	
-10.5	-.093	-.090		-.029		.065		-.009		-.088	.003
-6.0	.055	-.367		-.244		.195		-.093		-.264	.045
-3.0		-1.293	-1.143	-1.156				-.784	-.782	-.855	
-1.5		-1.745								-1.191	
0		-1.763	-2.131						-1.644	-1.238	
1.5		-1.596								-1.112	
3.0		-1.301	-1.244	-1.638				-.620	-.774	-.914	
4.5		-1.002								-.716	
6.0		-.702	-.743	-.789				-.569	-.520	-.567	
7.5		-.493		-.413				-.354		-.426	
9.0	-.308	-.304		-.248				-.105		-.257	-.255
10.5		-.203		-.154				-.229		-.232	
12.0	-.148	-.161		-.097		-.090		-.211		-.239	-.035
16.0	-.137	-.203		-.176		-.200		-.163		-.111	-.049
20.0		-.148				-.099				.027	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD

0	30	60	100
1.056	-.763	-3.301	-6.373
	-.199	-2.416	-4.730

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-1.719	-1.172	-.782	-.615	LEFT
-.439	-.780	-.457	-.545	RIGHT

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.965	-2.477	-2.255	-2.121	-1.990	-1.880	-1.751	-1.619	-1.444	-1.276	-.832	-.511	-.396	-.333
LOWER SURFACE		.661		.444	.315	.152		.125		.074	.025	.028		.062

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-3.576	-2.582	-2.285	-2.082	-1.829	-1.668	-1.551	-1.451	-1.337	-1.215	-.925	-.635	-.401	-.252
LOWER SURFACE		.817		.574	.410	.284		.128		.038	.008	.023		.074

TABLE XXXVI - Continued

(g) $M = 0.4$, $\alpha = -3.4$ deg, $f\mu = 0$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.667					
-14.0		-.057				.167				-.101	
-10.5	-.141	-.085		.060		.157		.049		-.062	-.104
-6.0	.327	-.037		-.062		.271		-.012		-.024	.307
-3.0		-.475	-.527	-.596				-.582	-.440	-.346	
-1.5		-.927								-.638	
0		-.838	-.747						-.914	-.688	
1.5		-.824								-.714	
3.0		-.894	-.802	-.706				-.630	-.656	-.641	
4.5		-.905								-.686	
6.0		-.776	-.745	-.764				-.772	-.896	-.736	
7.5		-.596		-.856				-.841		-.612	
9.0	-.383	-.516		-.886				-.898		-.480	-.416
10.5		-.373		-.555				-.486		-.621	
12.0	-.191	-.399		-.255		.739		-.111		-.561	-.303
16.0	-.126	-.485		-.161		.113		-.192		-.394	-.279
20.0		-.248				-.101				-.204	

ALC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	100
1.030	-.219	-1.589	-.674
	-.050	-1.458	-.622

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-.729	-.764	-.807	-.832	LEFT
-.595	-.703	-.809	-.787	RIGHT

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.653	-.897	-.943	-1.009	-1.057	-1.100	-1.084	-1.105	-1.077	-1.014	-.867	-.673	-.477	-.273
LOWER SURFACE		-.154		-.399	-.606	-.709		-.427		-.341	-.313	-.198		.005

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.816	-1.005	-1.011	-1.035	-1.067	-1.079	-1.089	-1.095	-1.056	-1.012	-.848	-.664	-.478	-.313
LOWER SURFACE		.021		-.149	-.233	-.287		-.331		-.325	-.263	-.160		.027

TABLE XXXVI - Continued

(h) $M = 0.4$, $\alpha = 0.9$ deg, $f\mu = 0$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.645					
-14.0		-.035				.100				-.080	
-10.5	-.099	-.056		.052		.121		.031		-.038	-.058
-6.0	.303	-.073		-.034		.309		.005		-.070	.298
-3.0		-.570	-.575	-.624				-.544	-.427	-.466	
-1.5		-.956								-.656	
0		-.950	-.924						-.919	-.829	
1.5		-.870								-.779	
3.0		-.914	-.808	-.728				-.696	-.934	-.824	
4.5		-.972								-.690	
6.0		-.758	-.763	-.913				-.898	-.973	-.670	
7.5		-.595		-.904				-.940		-.655	
9.0	-.434	-.519		-.759				-1.015		-.558	-.430
10.5		-.549		.608				-.677		-.559	
12.0	-.269	-.434		-.264		.420		-.349		-.568	-.365
14.0	-.135	-.476		-.279		.061		-.138		-.573	-.295
20.0		-.268				-.109				-.230	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	100
1.033	-.250	-1.744	-.672
	-.042	-1.501	-.719

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-.817	-.857	-.913	-.843	LEFT
-.767	-.787	-.820	-.869	RIGHT

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.376	-1.387	-1.339	-1.341	-1.313	-1.291	-1.264	-1.250	-1.194	-1.094	-.899	-.643	-.459	-.270
LOWER SURFACE		.264		-.001	-.201	-.315		-.177		-.176	-.176	-.097		.039

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.985	-1.774	-1.520	-1.535	-1.432	-1.381	-1.336	-1.286	-1.215	-1.124	-.909	-.674	-.471	-.280
LOWER SURFACE		.474		.225	.084	-.005		-.116		-.164	-.143	-.080		.050

TABLE XXXVI - Continued

(i) $M = 0.4$, $\alpha = 5.2$ deg, $f_L = 0$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.644					
-14.0		-.020				.031				-.039	
-10.5	-.071	-.068		.030		.100		.031		-.013	-.033
-6.0	.226	-.128		-.005		.318		.023		-.082	.178
-3.0		-.772	-.654	-.629				-.514	-.529	-.576	
-1.5		-1.074								-.681	
0		-1.120	-1.078						-.954	-.879	
1.5		-1.054								-.830	
3.0		-1.133	-.902	-.902				-.808	-.843	-.762	
4.5		-1.075								-.915	
6.0		-.816	-1.027	-1.096				-.839	-.904	-.860	
7.5		-.990		-1.186				-.932		-.782	
9.0	-.. 8	-.579		-1.129				-.808		-.626	-.511
10.5		-.527		-.776				-.709		-.734	
12.0	-.407	-.377		-.388		.547		-.480		-.675	-.403
16.0	-.162	-.384		-.251		.033		-.367		-.595	-.312
20.0		-.330				-.133				-.285	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	120
1.021	-.250	-1.796	-.818
	-.005	-1.573	-.735

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-.730	-.936	-.811	-.983	LEFT
-.944	-.814	-.853	-.976	RIGHT

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=14.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.319	-1.971	-1.773	-1.708	-1.609	-1.522	-1.453	-1.392	-1.252	-1.154	-.922	-.696	-.440	-.324
LOWER SURFACE		.590		.335	.153	.023		.034		-.005	-.042	-.015		.053

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-3.536	-2.607	-2.232	-2.027	-1.796	-1.636	-1.530	-1.438	-1.319	-1.175	-.903	-.620	-.375	-.218
LOWER SURFACE		.773		.519	.355	.244		.089		-.012	-.025	.002		.070

TABLE XXXVI - Continued

(j) $M = 0.4$, $\alpha = -3.4$ deg, $f\mu = 6.05$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.661					
-14.0		-.108				.149				-.123	
-10.5	-.183	-.125		.008		.117		.007		-.092	-.130
-6.0	.253	-.164		-.230		.167		-.137		-.157	.250
-3.0		-.968	-.977	-.934				-.904	-.808	-.727	
-1.5		-1.549								-1.151	
0		-1.428	-1.729						-1.822	-1.372	
1.5		-1.548								-1.281	
3.0		-1.419	-1.123	-1.061				-.826	-.918	-.913	
4.5		-.957								-.769	
6.0		-.795	-.735	-.867				-.513	-.575	-.562	
7.5		-.453		-.349				-.386		-.439	
9.0	-.318	-.326		-.390				-.273		-.349	-.363
10.5		-.206		-.199				-.162		-.226	
12.0	-.069	-.130		-.052		-.063		-.125		-.216	-.154
14.0	-.092	-.140		-.197		-.222		-.120		-.146	-.093
20.0		-.130				-.124				-.096	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	120
1.024	-.578	-2.680	6.083
	-.256	-2.401	6.083

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-.974	-1.053	-.512	-.373	LEFT
-.535	-.452	-.379	-.498	RIGHT

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.072	-1.321	-1.296	-1.431	-1.504	-1.489	-1.461	-1.476	-1.321	-1.168	-.831	-.646	-.436	-.279
LOWER SURFACE		-.081		-.346	-.569	-.672		-.411		-.340	-.305	-.197		.001

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.976	-1.139	-1.137	-1.147	-1.180	-1.194	-1.181	-1.184	-1.158	-1.073	-.900	-.701	-.495	-.313
LOWER SURFACE		.069		-.124	-.212	-.266		-.326		-.322	-.261	-.157		.019

TABLE XXXVI - Continued

(k) $M = 0.4$, $\alpha = 0.9$ deg, $f\mu = 6.05$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.537					
-14.0		-.068				.062				-.096	
-10.5	-.145	-.133		.013		.075		-.011		-.083	-.117
-6.0	.219	-.245		-.141		.195		-.114		-.196	.198
-3.0		-1.034	-1.002	-.948				-.972	-.895	-.859	
-1.5		-1.494								-1.269	
0		-1.586	-2.331						-2.164	-1.467	
1.5		-1.433								-1.337	
3.0		-1.422	-1.420	-1.178				-.957	-.976	-.970	
4.5		-1.112								-.809	
6.0		-.757	-.674	-.854				-.582	-.550	-.649	
7.5		-.578		-.529				-.492		-.488	
9.0	-.409	-.393		-.287				-.284		-.409	-.426
10.5		-.309		-.190				-.225		-.316	
12.0	-.216	-.261		-.121		-.099		-.072		-.271	-.219
16.0	-.092	-.183		-.233		-.214		-.097		-.192	-.138
20.0		-.144				-.157				-.109	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	100
1.025	-.431	-2.992	6.088
	-.266	-2.644	6.088

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-1.350	-1.136	-.598	-.470	LEFT
-.756	-.601	-.600	-.358	RIGHT

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-1.832	-1.808	-1.748	-1.753	-1.782	-1.753	-1.622	-1.539	-1.318	-1.123	-.892	-.715	-.544	-.450
LOWER SURFACE		.314		.032	-.159	-.290		-.181		-.180	-.192	-.122		-.007

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.217	-1.941	-1.785	-1.673	-1.591	-1.517	-1.446	-1.370	-1.297	-1.232	-.979	-.714	-.484	-.300
LOWER SURFACE		.494		.249	.099	.002		-.117		-.168	-.139	-.093		.044

TABLE XXXVI - Continued

(1) $M = 0.4$, $\alpha = 5.2$ deg, $f\mu = 6.05\ ft^2$

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.633					
-14.0		-.004				.009				-.070	
-10.5	-.071	-.070		.015		.059		-.024		-.072	-.077
-6.0	.179	-.235		-.090		.245		-.113		-.249	.099
-3.0		-1.130	-.947	-.923				-.962	-.941	-1.011	
-1.5		-1.669								-1.549	
0		-2.101	-1.841						-2.359	-1.780	
1.5		-1.628								-1.550	
3.0		-1.387	-1.030	-.922				-.942	-1.000	-1.066	
4.5		-1.010								-.896	
6.0		-.934	-.760	-.645				-.596	-.701	-.658	
7.5		-.550		-.628				-.542		-.481	
9.0	-.361	-.345		-.534				-.355		-.420	-.348
10.5		-.270		-.161				-.177		-.316	
12.0	-.123	-.222		-.078		-.140		-.114		-.295	-.215
16.0	-.070	-.215		-.169		-.195		-.113		-.182	-.125
20.0		-.124				-.137				-.124	

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	120
1.031	-.539	-2.870	6.070
	-.357	-2.802	6.070

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-.778	-1.087	-.510	-.476	LEFT
-1.072	-.663	-.423	-.448	RIGHT

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-2.840	-2.481	-2.232	-2.149	-2.085	-1.944	-1.810	-1.615	-1.417	-1.236	-.856	-.607	-.425	-.318
LOWER SURFACE		.635		.382	.210	.075		.079		.026	-.026	.008		.056

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-3.8[illegible]1	-2.740	-2.373	-2.138	-1.883	-1.716	-1.591	-1.485	-1.363	-1.227	-.913	-.619	-.391	-.263
LOWER SURFACE		.799		.542	.370	.255		.097		.006	-.015	.004		.073

TABLE XXXVI - Continued

(m) $M = 0.6$, $\alpha = -1.2$ deg, $f\mu = 0$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.702				-.093	
-14.0		-.054				.142		.083		-.022	-.067
-10.5	-.105	-.084		.094		.185		.092		.056	.391
-6.0	.386	.054		.062		.392		-.506	-.416	-.331	
-3.0		-.899	-.471	-.543						-.716	
-1.5		-1.060							-1.012	-.866	
0		-1.077	-.985							-.907	
1.5		-1.079						-.843	-.873	-.866	
3.0		-.947	-.950	-.826						-.875	
4.5		-.908						-.907	-.951	-.868	
6.0		-.936	-.849	-.893				-.879		-.796	
7.5		-.904		-.860				-.940		-.754	-.650
9.0	-.555	-.683		-1.007				-.867		-.640	
10.5		-.691		-.866		-.453		-.770		-.670	-.513
12.0	-.488	-.741		-.513		-.070		-.366		-.588	-.437
16.0	-.288	-.621		-.305		-.195				-.345	
20.0		-.397									

BLC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	180
1.082	-.084	-1.434	-.846
	.068	-1.434	-.824

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-.830	-.854	-.863	-.870	LEFT
-.847	-.833	-.893	-.876	RIGHT

WING-1/4 SEMI-SPAN=8.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.606	-.946	-1.043	-1.157	-1.339	-1.464	-1.477	-1.551	-1.422	-1.218	-1.028	-.837	-.608	-.420
LOWER SURFACE		-.052		-.325	-.602	-.780		-.491		-.367	-.366	-.243		-.046

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.966	-1.311	-1.342	-1.395	-1.500	-1.601	-1.682	-1.776	-1.861	-1.330	-.948	-.769	-.545	-.348
LOWER SURFACE		.149		-.072	-.188	-.267		-.356		-.391	-.322	-.207		-.002

TABLE XXXVI - Concluded

(n) $M = 0.6$, $\alpha = -1.2$ deg, $f\mu = 2.2$ ft^2

PYLON AND INSERT

STATION INCHES	CUT (DEGREES) 0	30	45	60	80	90	100	120	135	150	180
-16.0						.694					
-12.0		-.059				.138				-.089	
-10.5	-.113	-.053		.086		.185		.070		-.032	-.075
-6.0	.375	.040		.054		.387		.074		.041	.370
-3.0		-.521	-.514	-.572				-.573	-.492	-.448	
-1.5		-1.186								-1.008	
0		-1.443	-1.442						-1.442	-1.443	
1.5		-1.059								-1.210	
3.0		-.928	-.875	-.900				-.858	-.875	-.836	
4.5		-.992								-.834	
6.0		-.884	-.905	-.926				-.789	-.951	-.794	
7.5		-.751		-.898				-.865		-.776	
9.0	-.391	-.651		-.890				-.873		-.685	-.614
10.5		-.496		-.409				-.705		-.646	
12.0	-.486	-.420		-.237		-.200		-.718		-.580	-.428
16.0	-.225	-.376		-.395		-.012		-.460		-.496	-.291
20.0		-.381				-.217				-.292	

HEC CYLINDER

AZIMUTH (DEG), 0=FORWARD 0	30	60	180
1.002	-.084	-1.442	3.621
	.026	-1.442	3.621

AFTERBODY

STATION (INCHES) 3.0	4.5	6.0	7.5	SIDE
-1.157	-1.120	-.906	-.714	LEFT
-.829	-.784	-.777	-.746	RIGHT

WING-1/4 SEMI-SPAN=9.125 INCHES FROM ROOT: (CHORD=16.2 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.625	-.974	-1.086	-1.224	-1.432	-1.600	-1.510	-1.084	-.940	-1.079	-.911	-.826	-.712	-.627
LOWER SURFACE		-.046		-.331	-.604	-.778		-.494		-.383	-.407	-.254		-.067

WING-1/2 SEMI-SPAN=16.25 INCHES FROM ROOT: (CHORD=13.7 INCHES)

% CHORD	2	5	7.5	10	15	20	25	30	35	40	50	60	70	80
UPPER SURFACE	-.974	-1.303	-1.342	-1.393	-1.495	-1.604	-1.681	-1.736	-1.486	-1.190	-.951	-.726	-.536	-.398
LOWER SURFACE		.129		-.101	-.215	-.297		-.391		-.384	-.323	-.209		-.025